



ECS Mid-Atlantic, LLC

Preliminary Geotechnical Engineering Report

Appomattox Business Center - Preliminary

Richmond Highway
Appomattox, Virginia

ECS Project No. 12:20540

September 3, 2025





ECS MID-ATLANTIC, LLC

Geotechnical • Construction Materials • Environmental • Facilities

September 3, 2025

Mr. Josh MacDonald, P.E.
Kimley-Horn
11400 Commerce Park Drive
Suite 400
Reston, Virginia 20191

ECS Project No. 12:20540

Reference: Preliminary Geotechnical Engineering Report
Appomattox Business Center - Preliminary
Richmond Highway
Appomattox, Virginia

Dear Mr. MacDonald

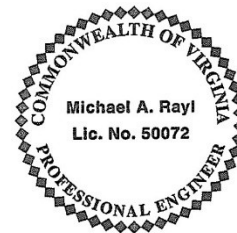
ECS Mid-Atlantic, LLC (ECS) has completed the subsurface exploration, laboratory testing, and preliminary geotechnical engineering analyses for the above-referenced project. Our services were performed in general accordance with our agreed to scope of work. This report presents our understanding of the geotechnical aspects of the project along with the results of the field exploration and laboratory testing conducted, and our design and construction recommendations.

It has been our pleasure to be of service to Kimley-Horn during the design phase of this project. We would appreciate the opportunity to remain involved during the continuation of the design phase, and we would like to provide our services during construction phase operations as well to verify subsurface conditions assumed for this report. Should you have any questions concerning the information contained in this report, or if we can be of further assistance to you, please contact us.

Respectfully submitted,

ECS Mid-Atlantic, LLC

Lance N. Bass
Project Engineer
lbass@ecslimited.com



Michael A. Rayl
Principal Engineer
mrayl@ecslimited.com

7670 ENON DRIVE, SUITE 101, ROANOKE, VA 24019 • T: 540-362-2000

ECS Florida, LLC • ECS Mid-Atlantic, LLC • ECS Midwest, LLC • ECS Pacific, Inc. • ECS Southeast, LLC • ECS Southwest, LLP
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"ONE FIRM. ONE MISSION."

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EXECUTIVE SUMMARY

This Executive Summary is intended as a very brief overview of the primary geotechnical conditions that are expected to affect design and construction. Information gleaned from the Executive Summary should not be utilized in lieu of reading the entire geotechnical report.

- **Subsurface Conditions:** The subsurface profile at the site is predominantly composed of fine-grained soils, including silt (ML/MH) and clay (CL/CH) classifications per the Unified Soil Classification System (USCS). A surficial root mat was identified, extending to depths of approximately 1.0 foot below existing grade. Deeper root systems may be present and should be fully removed during site clearing and grubbing to mitigate the risk of future settlement or instability.
- **Foundation Considerations:** Although a detailed structural foundation analysis is beyond the scope of this report, preliminary geotechnical characterization indicates that shallow foundation systems may be feasible for the proposed Business Center Campus structures. These foundations may be constructed on undisturbed, approved native soils or on ground improved soils to meet specified bearing criteria. Final foundation recommendations should be based on site-specific testing and analysis following completion of the final subsurface exploration program.
- **Stormwater Management (SWM) Facilities:** Preliminary global stability analyses of proposed stormwater management pond embankments suggest that the designed slopes satisfy the minimum factor of safety requirement of 1.5 under static loading conditions. Due to the relatively permeable nature of the native soils in these locations, low-permeability clay liners are recommended to limit seepage. On-site high-plasticity clay (CH) materials appear suitable for liner construction. If SWM facilities are intended to operate as infiltration basins, additional site-specific in-situ hydraulic conductivity testing (e.g., percolation or double-ring infiltrometer tests) is advised to verify feasibility.
- **Recommended Additional Exploration:** Following finalization of the site development plan, including building footprints and finished grades, supplemental geotechnical exploration, laboratory testing, and engineering analyses will be necessary for the design of all proposed structures and infrastructure.

Refer to the text of the report for site specific design and construction recommendations.

Note: This summary presents only preliminary findings and interpretations. Refer to the final geotechnical report (under separate cover) for comprehensive analyses, design parameters, and construction recommendations tailored to specific site conditions.

1.0 INTRODUCTION

The purpose of this preliminary study was to provide preliminary geotechnical information for the conceptual layout of the proposed site for the purposes of submitting conceptual/initial site plans to Appomattox County, Virginia for approval.

Although the layout of the project is anticipated to change, the current plan includes data center buildings, stormwater management (SWM) facilities, substations, slopes, and associated pavement and utilities. The locations of our subsurface exploration were focused on select SWM facilities and coordinated based on the grading plans entitled *Project Hercules* prepared by Kimley-Horn dated May 21, 2025. The project is in the preliminary stages and an additional subsurface exploration(s) will be required for final geotechnical design.

Our services were provided in accordance with our Proposal No. 16199-GPRR, dated May 30, 2025, as authorized by Kinley-Horn on July 9, 2025, in accordance with the terms of the Master Agreement for Continuing Professionals Services, dated June 11, 2021.

This report contains the procedures and results of our subsurface exploration and laboratory testing programs, review of existing site conditions, engineering analyses, and recommendations for the preliminary design and construction of the project. The report includes the following items:

- A brief review and description of our field and laboratory test procedures and the results of testing conducted
- A review of surface topographical features and site conditions
- A review of area and site geologic conditions
- A review of subsurface soil/rock stratigraphy with pertinent physical properties
- Final soil exploration/test boring logs
- Recommendations for seismic site classification in accordance with the International Building Code (VCC 2022)
- Preliminary recommendations for design and construction of drainage structures and stormwater management facilities
- Preliminary global stability analyses for the proposed SWM facilities.

2.0 PROJECT INFORMATION

2.1 PROJECT LOCATION/CURRENT SITE USE/PAST SITE USE

The site is located along Richmond Highway within Appomattox, Virginia. At the time of our visit, the ground surface over the site was tall grass with densely wooded areas scattered throughout the site. The overall site is bounded to the north, south, and west by densely wooded areas, and to the east by Oakville Road.



Figure 1 Site Location

Based on the provided plan from Kimley-Horn, existing elevations range from approximately EL. +674 ft to EL. +809 ft. Based on our review of available aerial photography and our site visits, the proposed building sites appear to be undeveloped and have no other previous site use.

2.2 PROPOSED CONSTRUCTION

Based on the provided plans, it is understood the (Phase 1) development of this campus will include one (1) 2-story data center building, three (3) stormwater management facilities, a substation area, and associated pavements and utilities.

At this time, the remainder of the site is planned for future Phase 2 development which will include additional data center, and associated support structures, but these are not included in this preliminary scope.

Current details regarding the proposed data center building are noted below:

SUBJECT	DESIGN INFORMATION / ASSUMPTIONS
# of Stories	2 stories above grade, with loading docks
Column Loads*	1,200 kips maximum
Wall Loads*	10 kips per linear foot (klf) maximum
Slab Loads	500 psf
Lowest Finish Floor Elevation	Building 1: EL 755 ft to 765 ft Substation: EL 750 ft to 760 ft

*Assumed load are based on reasonable material and product loads. If final design loads exceed our assumed loads, this report needs to be revised to update our foundation recommendations, bearing capacity, and settlement calculations.

At this time, maximum cuts and fills at the site are anticipated to be on the order of 25 ft (preliminary stage of Phase I limited to the SWM, Building 1, and Substation locations only).

Our understanding of the project is based on the site plan entitled *Grading Plan* prepared by Kimley Horn, dated May 21, 2025. If there are any updated plans that differ than noted above, ECS should be advised so this report can be revised as needed.

3.0 FIELD EXPLORATION AND LABORATORY TESTING

Our scope of work included drilling a total of 14 Standard Penetration Test (SPT) borings referenced as Borings B-01 and B-02, SS-01 and SS-02, and SWM-01 through SWM-10. Our exploration procedures are explained in greater detail in Appendix B including the Subsurface Exploration Procedures. Our borings were located in the field by ECS personnel using a handheld GPS system. The approximate locations of our tests are shown on the Boring Location Diagram in Appendix A. Ground surface elevations noted on our boring logs were interpolated from the site plan provided by you.

3.1 SITE GEOLOGY

Based on our review of the "Geologic Map of Virginia" (Virginia Division of Mineral Resources, 1993), the project site is located within Virginia's Piedmont Physiographic and Geologic Province.

Specifically, the project site is mapped to be underlain by metavolcanic and metasedimentary rocks (€fvs & €Zmvs) and adjacent to the Fork Mountain Formation (€Zfm). Metavolcanic and metasedimentary rocks primarily consist of felsic metatuff, mica schist, gneiss, greenstone, and amphibole gneiss. The Fork Mountain Formation mainly consists of mica schist, biotite gneiss, quartzite, and melange.

The boundary between soil and rock is not sharply defined. A transitional zone termed "weathered rock" is normally found overlying the parent bedrock. Weathered Rock (WR) is defined, for engineering purposes, as residual material with Standard Penetration resistance greater than 60 blows per foot (bpf). Because weathering is facilitated by fractures, joints, and the presence of less resistant rock types, the profile of the WR and hard rock is typically irregular and erratic, even over short horizontal distances. Also, it is not unusual to find lenses and natural floating boulders of hard rock in zones of WR within the soil mantle, well above the general bedrock level.

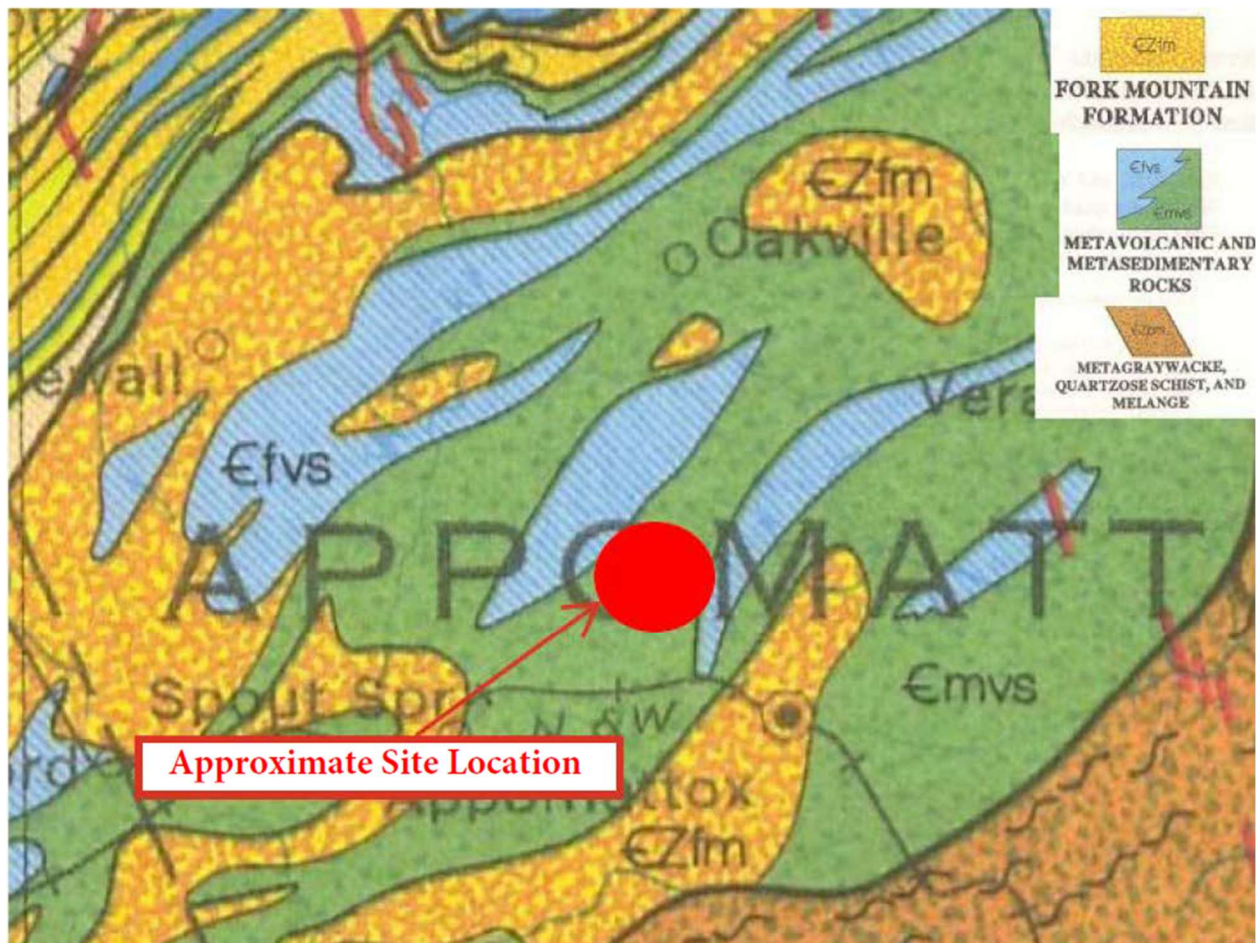


Figure 2 Geologic Map of Project Site "Geologic Map Virginia"

3.2 SUBSURFACE CHARACTERIZATION

The subsurface conditions encountered were generally consistent with published geological mapping. Table 1 provides generalized characterizations of the soil strata. Please note that the ground surface elevations were not surveyed by a licensed surveyor; these elevations are approximate based on the site plan entitled *Grading Plan* prepared by Kimley Horn, dated May 21, 2025; therefore, elevation ranges are approximate +/- several feet. Please refer to the boring logs in Appendix B.

Table 1: General Subsurface Characterization

Approximate Depth (ft)	Stratum	Description	Ranges of SPT ⁽¹⁾ N-values (bpf)
0-0.5 (Surface cover)	N/A	Topsoil (3 to 6 inches)	N/A
0.3-44.5	I	Residuum, Soft to Very Stiff LEAN CLAY (CL), varying amounts of gravel, sand, and silt, moist; Loose to Very Dense SILT (ML), varying amounts of gravel, mica, and sand, moist; Very Dense POORLY GRADED SAND (SP), varying amounts of gravel and silt, moist; Soft to Stiff FAT CLAY (CH), varying amounts of gravel, roots, and sand, moist; Firm to Hard ELASTIC SILT (MH), moist; Dense CLAYEY SAND (SC), varying amounts of gravel, moist	4 to 50+
23.5-70	II	Weathered Rock Sampled as POORLY GRADED SAND (WR), varying amounts of gravel, mica, and sand, moist, very dense; SILT (WR), varying amounts of gravel, mica, and sand, moist to saturated, dense to very dense; LEAN CLAY WITH SILT (WR), contains rock fragments, moist, hard; ELASTIC SILT (WR), varying amounts of gravel, moist, very hard	60+

Notes:

(1) Standard Penetration Testing

A graphical presentation of the subsurface conditions is shown on the Subsurface Cross Section Diagrams included in Appendix A.

3.3 GROUNDWATER OBSERVATIONS

Groundwater measurements were attempted at each boring during drilling and at termination of drilling. Groundwater was observed in Borings B-01, B-02, SS-01, SWM-04, SWM-06, SWM-07, SWM-08, and SWM-10 at depths ranging from 16 feet to 48.5 feet below the existing ground surface (corresponding to elevations between 690.5 to 767 feet). Cave in depths were observed at the borings at depths ranging from 12 to 41 feet below existing grades surface (corresponding to elevations between 725 to 730 feet). Cave-in of soil test borings can be caused by groundwater hydrostatic pressure, weak soil layers, and/or drilling activities.

Variations in groundwater levels can occur due to precipitation, evaporation, seasonal/climatic variations, surface water infiltration rate of the soil, construction activities & land usage and other factors. Groundwater levels may also vary due to water level variations within nearby creeks, rivers, lakes, and other water bodies.

Perched water or localized groundwater may exist within overburden soil layers and/or at the contact of rock. Perched water conditions may also develop at shallower or variable depths seasonally, particularly within granular/pervious soil underlain by less permeable cohesive soil, or, within any existing fill, within existing utility and structure backfill, and within fissured soil.

Since groundwater levels can vary several feet with time, the water levels presented in this report should not be considered absolute levels and should be taken as anticipated general groundwater levels. It is advisable that the contractor determine the actual groundwater levels at the time of construction to assess the impact on any construction.

“Perched water is typically of limited quantity, replenished or recharged very slowly. When encountered in an excavation, perched water will typically drain off very quickly, with limited continuous flow or bleeding, unless a source of recharge, such as a leaking utility is present.”

From: Construction Dewatering and Groundwater Control – New Methods and Applications, 3rd Addition

A water table aquifer is distinguished from a perched groundwater table based on the water table aquifer's recharge ability, which may be limitless but can be lowered temporarily through adequate dewatering techniques such as deep wells and well points. Perched groundwater is often alleviated in excavations by pumping from sump pits and French drains.

3.4 LABORATORY TESTING

The laboratory testing consisted of selected tests performed on samples obtained during our field exploration operations. Classification and index property tests were performed on representative soil samples. The laboratory testing program included natural moisture content tests (ASTM D2216), grain size analyses tests (ASTM D6913), Atterberg Limits tests (ASTM D4318), One-Dimensional Consolidation tests (ASTM D2435), and Direct Shear tests (ASTM D3080). The results of all laboratory testing conducted are included in the Appendix of this report.

Each sample was visually classified on the basis of texture and plasticity in accordance with ASTM D2488 Standard Practice for Description and Identification of Soils (Visual-Manual Procedures) and including USCS classification symbols, and ASTM D2487 Standard Practice for Classification for Engineering Purposes (Unified Soil Classification System (USCS)). After classification, the samples were grouped in the major zones noted on the boring logs in Appendix B. The group symbols for each soil type are indicated in parentheses along with the soil descriptions. The stratification lines between strata on the logs are approximate; in situ, the transitions may be gradual.

4.0 PRELIMINARY DESIGN RECOMMENDATIONS

The preliminary geotechnical evaluation is based on the site plan entitled *Grading Plan* prepared by Kimley Horn, dated May 21, 2025. The preliminary grading plans were provided at the time of planning the soil boring depths. Additional soil borings will be required in the final Phase I and Phase II design phases. Further details can be found on the appropriate subsurface profiles contained in Appendix A and Boring Logs contained in Appendix B.

4.1 MASS GRADING SETTLEMENT MONITORING

Maximum cuts and fills at the site will be up to 25 feet. Due to the depth and relative variation in fill depth across the building pads and substation and the potential for differential settlement, it is recommended that monitoring plates be installed in areas of the deepest fill. The settlement plates should be installed at the completion of fill placement and readings taken at least 2 times per week by a registered land surveyor. This will allow for monitoring of the settlement of the fill prior to installation of any structural elements of the building and adjacent pavement areas. The purpose of monitoring this settlement is to reduce the potential for differential settlement due to the variation in fill depths. Time to monitor the settlement plates must be built into the schedule. For preliminary purposes, 4 weeks should be added to the schedule for monitoring.

4.2 FOUNDATIONS

This preliminary GER includes two borings at the proposed Building 1 location and two borings at the proposed substation location. A detailed foundation analysis is not possible given the limited subsurface information collected from the borings and is beyond the scope of this report; however, preliminary geotechnical characterization indicates that shallow foundation systems may be feasible for the proposed Business Center Campus structures. Depending on final structure loading and subsurface conditions, these foundations may be constructed on undisturbed, approved in-situ soils or on a system of ground improvements to meet specified bearing and settlement criteria. Final foundation recommendations should be based on site-specific testing and analysis following completion of the final subsurface exploration program and will be provided in the final GER under separate cover.

4.3 SEISMIC DESIGN CONSIDERATIONS

The Commonwealth of Virginia has adopted Virginia Construction Code 2021 (VCC) via the Virginia Uniform Statewide Building Code (USBC). The current version of VCC incorporates ASCE 7-22, Minimum Design Loads and Associated Criteria for Building and Other Structures into the building code. This adoption supersedes section 16 of IBC 2021, in respect to seismic site classification.

ASCE 7-22, Chapter 20 has updated the procedure for determining Site Classification. This chapter requires that site classification be conducted based on the average shear wave velocity of the top 100 feet of the site. The shear wave velocity can either be measured or estimated based on established correlations. If site classification is based on estimated values of shear wave velocity (v_s) the site class shall be derived using V_s , $V_s/1.3$ and $V_s(1.3)$. The seismic site class definitions for the weighted average shear wave velocities in the upper 100 feet of the soil profile are presented in Chapter 20 of ASCE 7-22 and in the table below.

Table 2 – Seismic Site Classification

Site Class	Soil Profile Name	Shear Wave Velocity, V_s , (ft./s)
A	Hard Rock	$V_s > 5,000$ ft./s
B	Rock	$>3,000$ to $5,000$ ft./s
BC	Soft Rock	$>2,100$ to $3,000$ ft./s
C	Very Dense Sand or Hard Clay	$>1,450$ to $2,100$ ft./s
CD	Dense Sand or Very Stiff Clay	$>1,000$ to $1,450$ ft./s
D	Medium Dense Sand or Stiff Clay	>700 to $1,000$ ft./s
DE	Loose Sand or Medium Stiff Clay	>500 to 700 ft./s
E	Very Loose Sand or Soft Clay	$V_s < 500$ ft./s

In this project shear wave velocity of the soil profile was estimated based on the soil densities observed. Based upon our estimate and assumed proposed bearing elevations of the structure we recommend that a preliminary **Site Classification D** be used for the structure. This site Classification is based on a Risk Category of III for the building. This recommendation is in accordance with the procedure outlined in ASCE 7-22. It is worth noting that if this project is submitted under a different code year an alternate soil site classification may be appropriate. We should be notified if this project is being submitted for design under VCC 2018 (IBC-2018 or ASCE 7-16).

4.4 STORMWATER MANAGEMENT PONDS

General Conditions

It is understood that a total of three SWM ponds are indicated on the provided site plan. A table with the pond characteristics is below:

Table 3: SWM Pond Characteristics

SWM Location	SWM-Borings	Top of Embankment Elevation (ft)	Bottom of Pond Elevation (ft)	Observed Water Elevation (ft)
SWM Pond 1 (South of Building 1)	SWM-01 through SWM-04	760	722	690.5
SWM Pond 2 (Northeast of Building 1)	SWM-05 through SWM-07	755	743	733.5-734.5
SWM Pond 3 (South of Substation 1)	SWM-8 through SWM-10	787	763	745.5-746

At the time of this report, the ponds have not been identified as either wet or dry ponds. Based on the available soil boring, grading and laboratory data, the majority of cut will be SILT (ML), ELASTIC SILT (MH), LEAN CLAY (CL), and FAT CLAY (CH) materials. While the low plasticity cuts (ML and CL materials) will be a

source of Engineered Fill in other areas of the site, it is not anticipated that the materials will be available for use for lining the bottom or the embankments. Similarly, the embankments in cut conditions will likely not be able to retain water. Therefore, we recommend that each of the ponds include a compacted clay liner or geosynthetic liner.

If SWM ponds are to be utilized as infiltration basins, we recommend that multiple infiltration tests be performed at the proposed pond invert elevation to gauge infiltration capacity. Note that due to the variable nature of the soil profile across the site, bottom of SWM pond structures may have more than one material type, and infiltration testing at specific locations may not be representative of the pond's actual ability to provide infiltration.

Based on the soils encountered, we recommend that the side slopes of the embankments generally be no steeper than 3H:1V. To reduce seepage, the ponds should each include a minimum 24-inch-thick compacted clay liner that is installed to a minimum elevation of the 100-year storm elevation. The soil liner should consist of Clay soil classified as CL or CH with a permeability of 10-5 cm/sec or slower. Soils suitable for use as Clay Liner (classified as CL or CH) are expected to be encountered within the onsite cuts. These materials may also be imported.

Global Stability Analyses

ECS performed global stability of slope areas depicted on the Boring Location Diagram in Appendix A. Cross sections 1-1', 2-2', 3-3', and 4-4' utilized the grading from the site plan entitled *Grading Plan* prepared by Kimley Horn, dated May 21, 2025. The soil profiles were generated using the limited nearby borings. Soil parameters for soil groups were estimated based on laboratory testing (standard proctor tests, direct shear tests), and our local experience.

The global stability analyses were performed using the SLIDE program by RocScience. A factor of safety of 1.5 was considered to be the minimum adequate factor of safety for long term conditions. A total of four (4) areas were analyzed and the results are summarized in Table 2 below.

Since final SWM details were not available at the time of this report, rapid drawdown evaluations were not performed. This should be completed during the subsequent site evaluation based on final SWM pond types/classifications. The global stability outputs have been included in this report in Appendix D.

Table 2: Preliminary Global Stability Analysis Results

Cross Section	Location	Geometry	F.S.	Notes
1-1'	Slope North of SWM Pond 1 at Building 1	3.5H:1V and 5H:1V Slopes above Pond 1	2.43	As Designed
2-2'	Slope Southeast of SWM Pond 1 at Building 1	3.5H:1V and 5H:1V Slopes above Pond 1	2.46	As Designed
3-3'	Slope Northeast of SWM Pond 2 at Building 1	3.5H:1V and 5H:1V Slopes above Pond 2	1.98	As Designed
4-4'	Slope North of SWM Pond 3 at Substation 1	6.5H:1V and 5H:1V Slopes above Pond 3	4.12	As Designed

General SWM Pond Recommendations

For the downstream slopes of the embankments, the natural onsite soils should expect to easily erode and create rills or erosion channels. Stabilization mats may need to be included in order stabilize the soil and promote vegetative growth.

The principal spillway should consist of a reinforced concrete pipe (RCP). The installation of the RCP principal spillway pipe should be during the construction of the embankment, not cutting down and installing after the embankment has been constructed.

Additional borings will be required at these locations to evaluate long-term groundwater levels, invert soil properties, and to evaluate global stability. We also suggest long-term monitoring wells be installed and monitored at deeper proposed facilities to observe and account for groundwater conditions.

4.5 UTILITY INSTALLATION

The location and depth of utilities and ductbanks were not known at the time of this report. Granular soils at the site will tend to ravel or cave-in. This will be exacerbated near or below the water table.

The contractor should be prepared to dewater the excavation and use a trench box or sheeting for side wall support if groundwater is encountered. It should be expected that underlying sandy/silty soils at or near the water table will ravel or cave-in quickly. Depending on the invert elevations (near lower areas of the site) and soil types, well points may be required.

Excavated materials from the utility alignments will likely be wet of optimum depending on the grade. These materials will not be suitable for reuse as backfill material unless dried back to the suitable moisture range. For backfill within structural fill areas that are below the water seepage elevation, soil backfill may not be practical. Open graded stone backfill, such as VDOT No. 57 stone, may be required in structural

areas to about 1 foot over the water seepage elevation followed by compacted structural fill to subgrade. We recommend that a filter fabric be placed over the VDOT No. 57 Stone to reduce migration of fine soil particles into the stone layer from the subsequent fill soil above.

4.6 ADDITIONAL SUBSURFACE EXPLORATIONS AND TESTING

This study included widely spaced borings that are not suitable for final design. Additional subsurface exploration, laboratory testing and analyses are required for all building and site structures. The exploration and analysis should be completed once the final layout and grading is established.

5.0 SITE CONSTRUCTION RECOMMENDATIONS

Site construction recommendations will be provided once a comprehensive and complete subsurface exploration program has been completed for each phase of the business center project. Construction recommendations will take into consideration in-situ soil conditions that are not yet available at the time of this preliminary report.

6.0 CLOSING

ECS has prepared this report to guide the geotechnical-related design and construction aspects of the project. We performed these services in accordance with the standard of care expected of professionals in the industry performing similar services on projects of like size and complexity at this time in the region. No other representation, expressed or implied, and no warranty or guarantee is included or intended in this report.

The description of the proposed project is based on information provided to ECS by our client. If any of this information is inaccurate or changes, either because of our interpretation of the documents provided or site or design changes that may occur later, ECS should be contacted so we can review our recommendations and provide additional or alternate recommendations that reflect the proposed construction.

We recommend that ECS review the project plans and specifications so we can confirm that those plans/specifications are in accordance with the recommendations of this geotechnical report.

Field observations, and quality assurance testing during earthwork and foundation installation are an extension of, and integral to, the geotechnical design. We recommend that ECS be retained to apply our expertise throughout the geotechnical phases of construction, and to provide consultation and recommendation should issues arise.

ECS is not responsible for the conclusions, opinions, or recommendations of others based on the data in this report.

APPENDIX A – Diagrams & Reports

Site Location Diagram
Boring Location Diagram
Subsurface Cross-Sections

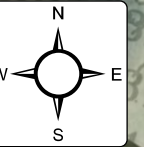


SITE LOCATION DIAGRAM

Appomattox Business Center - Preliminary

Industrial Park Lane, Appomattox, Virginia
Kimley-Horn and Associates, Inc.

ENGINEER LNB
SCALE 1" = 1000'
PROJECT NO. 12:20540
SHEET 1
DATE 9/3/2025



Legend

-  Approximate Boring Location
-  Approximate Cross-Section Location
-  Approximate Global Stability Section Location

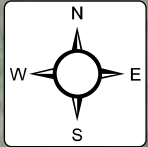


BORING LOCATION DIAGRAM 1

Appomattox Business Center - Preliminary

Industrial Park Lane, Appomattox, Virginia
Kimley-Horn and Associates, Inc.

ENGINEER LNB
SCALE 1" = 200'
PROJECT NO. 12:20540
SHEET 2
DATE 9/3/2025



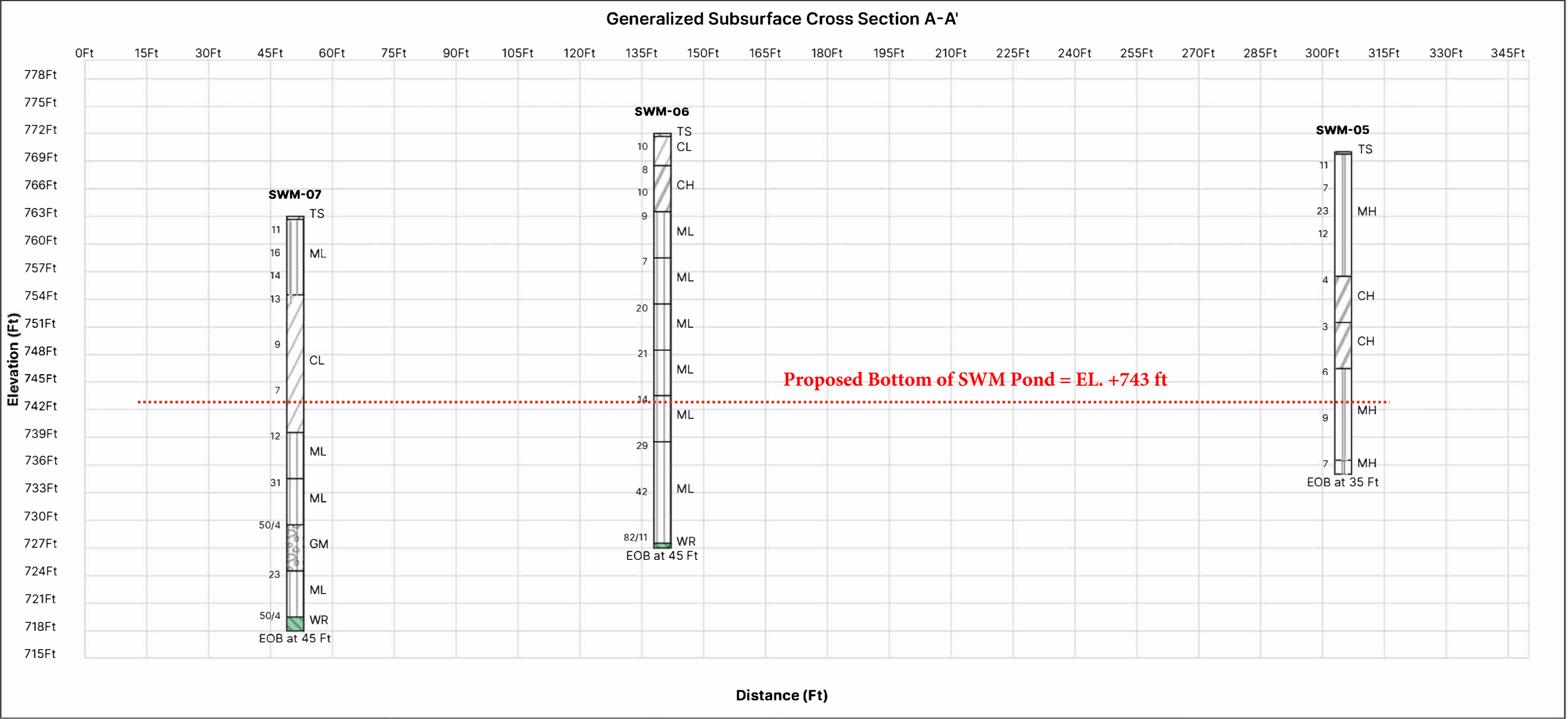
Legend

-  Approximate Boring Location
-  Approximate Cross-Section Location
-  Approximate Global Stability Section Location

BORING LOCATION DIAGRAM 2
Appomattox Business Center - Preliminary
Industrial Park Lane, Appomattox, Virginia
Kimley-Horn and Associates, Inc.



ENGINEER LNB
SCALE 1" = 200'
PROJECT NO. 12:20540
SHEET 1
DATE 9/3/2025



Generalized Subsurface Cross Section A-A'

Elevation (Ft)

778Ft
775Ft
772Ft
769Ft
766Ft
763Ft
760Ft
757Ft
754Ft
751Ft
748Ft
745Ft
742Ft
739Ft
736Ft
733Ft
730Ft
727Ft
724Ft
721Ft
718Ft
715Ft

Distance (Ft)

350Ft 365Ft 380Ft 395Ft 410Ft 425Ft 440Ft 455Ft 470Ft 485Ft 500Ft 515Ft 530Ft 545Ft 560Ft 575Ft 590Ft 605Ft 620Ft 635Ft 650Ft 665Ft 680Ft 695Ft

Elevation (Ft)

Subsurface Cross Section B-B'

The chart displays two boreholes, B-01 and B-02, plotted against a grid of Elevation (Ft) and Distance (Ft).

Distance (Ft) Scale: 0Ft, 20Ft, 40Ft, 60Ft, 80Ft, 100Ft, 120Ft, 140Ft, 160Ft, 180Ft, 200Ft, 220Ft, 240Ft, 260Ft, 280Ft, 300Ft, 320Ft, 340Ft, 360Ft, 380Ft, 400Ft, 420Ft, 440Ft.

Elevation (Ft) Scale: 775Ft, 770Ft, 765Ft, 760Ft, 755Ft, 750Ft, 745Ft, 740Ft, 735Ft, 730Ft, 725Ft, 720Ft, 715Ft, 710Ft, 705Ft, 700Ft, 695Ft, 690Ft, 685Ft, 680Ft, 675Ft, 670Ft.

Borehole B-01 Data:

Elevation (Ft)	Distance (Ft)	Soil Type	Notes
770Ft	420Ft	TS	
765Ft	420Ft	CL	
760Ft	420Ft	ML	
755Ft	420Ft	ML	
750Ft	420Ft	ML	
745Ft	420Ft	ML	
740Ft	420Ft	ML	
735Ft	420Ft	WR	
730Ft	420Ft	WR	
725Ft	420Ft	WR	
720Ft	420Ft	WR	
715Ft	420Ft	WR	
710Ft	420Ft	WR	
705Ft	420Ft	WR	
700Ft	420Ft	WR	
695Ft	420Ft	WR	
690Ft	420Ft	WR	
685Ft	420Ft	WR	
680Ft	420Ft	WR	
675Ft	420Ft	WR	
670Ft	420Ft	WR	

Borehole B-02 Data:

Elevation (Ft)	Distance (Ft)	Soil Type	Notes
745Ft	100Ft	TS	
740Ft	100Ft	CH	
735Ft	100Ft	ML	
730Ft	100Ft	CL	
725Ft	100Ft	ML	
720Ft	100Ft	WR	
715Ft	100Ft	WR	
710Ft	100Ft	WR	
705Ft	100Ft	WR	
700Ft	100Ft	WR	
695Ft	100Ft	WR	
690Ft	100Ft	WR	
685Ft	100Ft	WR	
680Ft	100Ft	WR	
675Ft	100Ft	WR	
670Ft	100Ft	WR	

Notes:

- EOB at 70 Ft (End of Borehole)
- EOB at 70 Ft (End of Borehole)

CLIENT:	Kimley-Horn and Associates, Inc.	PROJECT:	Appomattox Business Center - Preliminary			
DRAWN DATE:	9/3/2025	PROJECT NO.:	12:20540			
CHECKED DATE:	9/3/2025	SCALE:	NTS			
Notes: 1-EOB: END OF BORING AR: AUGER REFUSALSR: SAMPLER REFUSAL 2-SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL INFORMATION. 3-STANDARD PENETRATION TEST RESISTANCE (LEFT OF BORING) IN BLOWS PER FOOT (ASTM D1586). 4- TOPOGRAPHIC INFORMATION IS BASED ON PUBLICLY AVAILABLE DATA (GOOGLE OR CESIUM).THE TOPOGRAPHIC LINE SHOWN BETWEEN BORINGS IS FOR VISUAL REFERENCE ONLY.PLEASE REFER TO THE REFERENCE NOTES FOR BORING LOGS FOR SYMOLOGY MEANING AND ADDITIONAL INFORMATION.	Plastic Limit Water Content Liquid Limit		WL (First Encountered)		Fill	
	X—————●—————△					
	[FINES CONTENT %]		WL (Completion)		Possible Fill	
	 BOTTOM OF CASING		WL (Estimated Seasonal High Water)		Probable Fill	
	 LOSS OF CIRCULATION					
	 CALIBRATED PENETROMETER		WL (Stabilized)		WR/Rock	

Subsurface Cross Section C-C'

Elevation (Ft)

Distance (Ft)

SWM-01

- TS
- CL
- MH
- MH
- EOB at 25 Ft

SWM-02

- TS
- CL
- CL
- CL
- CL
- MH
- ML
- WR
- EOB at 25 Ft

SWM-03

- TS
- CL
- CL
- ML
- ML
- ML
- ML
- EOB at 30 Ft

SWM-04

- TS
- CL
- CH
- ML
- WR
- WR
- EOB at 30 Ft

Proposed Bottom of SWM Pond = EL. +722 ft

CLIENT:	Kimley-Horn and Associates, Inc.	PROJECT:	Appomattox Business Center - Preliminary			
DRAWN DATE:	9/3/2025	PROJECT NO.:	12:20540			
CHECKED DATE:	9/3/2025	SCALE:	NTS			
Notes: 1-EOB: END OF BORING AR: AUGER REFUSALSR: SAMPLER REFUSAL 2-SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL INFORMATION. 3-STANDARD PENETRATION TEST RESISTANCE (LEFT OF BORING) IN BLOWS PER FOOT (ASTM D1586). 4- TOPOGRAPHIC INFORMATION IS BASED ON PUBLICLY AVAILABLE DATA (GOOGLE OR CESIUM).THE TOPOGRAPHIC LINE SHOWN BETWEEN BORINGS IS FOR VISUAL REFERENCE ONLY.PLEASE REFER TO THE REFERENCE NOTES FOR BORING LOGS FOR SYMBOLOGY MEANING AND ADDITIONAL INFORMATION.	Plastic Limit Water Content Liquid Limit X————●————△	▽	WL (First Encountered)		Fill	
	[FINES CONTENT %]	▼	WL (Completion)		Possible Fill	
	BOTTOM OF CASING	▽	WL (Estimated Seasonal High Water)		Probable Fill	
	LOSS OF CIRCULATION					
	○ CALIBRATED PENETROMETER	▽	WL (Stabilized)		WR/Rock	

Subsurface Cross Section D-D'

SS-02

Elevation (Ft)	Distance (Ft)	Soil Type	Thickness (Ft)
794	0	TS	0.5
792	6	CL	6
790	7	CL	7
788	10	CL	10
786	7	CL	7
784	7	ML	7
782	7	ML	7
780	7	ML	7
778	15	ML	15
776	15	ML	15
774	15	ML	15
772	15	ML	15
770	7	CL	7
768	7	CL	7
766	8	ML	8
764	8	ML	8
762	8	ML	8
760	45	SC	45
758	35	EOB	35

SS-01

Elevation (Ft)	Distance (Ft)	Soil Type	Thickness (Ft)
794	0	TS	0.5
792	4	CL	4
790	6	MH	6
788	33	MH	33
786	12	ML	12
784	12	ML	12
782	8	ML	8
780	8	ML	8
778	15	ML	15
776	12	ML	12
774	12	ML	12
772	11	ML	11
770	11	ML	11
768	11	ML	11
766	11	ML	11
764	11	ML	11
762	11	ML	11
760	11	ML	11
758	11	ML	11
756	11	ML	11
754	50/5	WR	50/5
752	30	EOB	30

CLIENT:	Kimley-Horn and Associates, Inc.	PROJECT:	Appomattox Business Center - Preliminary				
DRAWN DATE:	9/3/2025	PROJECT NO.:	12:20540				
CHECKED DATE:	9/3/2025	SCALE:	NTS				
Notes: 1-EOB: END OF BORING AR: AUGER REFUSALSR: SAMPLER REFUSAL 2-SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL INFORMATION. 3-STANDARD PENETRATION TEST RESISTANCE (LEFT OF BORING) IN BLOWS PER FOOT (ASTM D1586). 4- TOPOGRAPHIC INFORMATION IS BASED ON PUBLICLY AVAILABLE DATA (GOOGLE OR CESIUM).THE TOPOGRAPHIC LINE SHOWN BETWEEN BORINGS IS FOR VISUAL REFERENCE ONLY.PLEASE REFER TO THE REFERENCE NOTES FOR BORING LOGS FOR SYMBOLOGY MEANING AND ADDITIONAL INFORMATION.	Plastic Limit Water Content Liquid Limit			WL (First Encountered)		Fill	
	X————●————△ [FINES CONTENT %]			WL (Completion)		Possible Fill	
		BOTTOM OF CASING		WL (Estimated Seasonal High Water)		Probable Fill	
		LOSS OF CIRCULATION					
		CALIBRATED PENETROMETER		WL (Stabilized)		WR/Rock	

Subsurface Cross Section E-E'

Elevation (Ft)

Distance (Ft)

SWM-09

Soil Type	Thickness (Ft)	Start Elevation (Ft)	End Elevation (Ft)
TS	4	788	784
CL-ML	10	784	774
ML	12	774	762
ML	11	762	751
ML	20	751	731
ML	32	731	699
ML	26	699	673

EOB at 35 Ft

SWM-08

Soil Type	Thickness (Ft)	Start Elevation (Ft)	End Elevation (Ft)
TS	11	773	762
CL	6	762	756
CH	23	756	733
ML	38	733	695
ML	20	695	675
ML	28	675	647
ML	50	647	597
WR	73	597	524
WR	22	524	502

EOB at 35 Ft

SWM-10

Soil Type	Thickness (Ft)	Start Elevation (Ft)	End Elevation (Ft)
TS	9	764	755
CL	9	755	746
CH	10	746	736
CL	11	736	725
ML	5	725	720
ML	7	720	713
ML	19	713	694
CH	12	694	682
ML	13	682	669
WR	50+	669	619

EOB at 35 Ft

Proposed Bottom of SWM Pond = EL. +763 ft

CLIENT:	Kimley-Horn and Associates, Inc.	PROJECT:	Appomattox Business Center - Preliminary				
DRAWN DATE:	9/3/2025	PROJECT NO.:	12:20540				
CHECKED DATE:	9/3/2025	SCALE:	NTS				
Notes: 1-EOB: END OF BORING AR: AUGER REFUSALSR: SAMPLER REFUSAL 2-SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL INFORMATION. 3-STANDARD PENETRATION TEST RESISTANCE (LEFT OF BORING) IN BLOWS PER FOOT (ASTM D1586). 4- TOPOGRAPHIC INFORMATION IS BASED ON PUBLICLY AVAILABLE DATA (GOOGLE OR CESIUM).THE TOPOGRAPHIC LINE SHOWN BETWEEN BORINGS IS FOR VISUAL REFERENCE ONLY.PLEASE REFER TO THE REFERENCE NOTES FOR BORING LOGS FOR SYMBOLOGY MEANING AND ADDITIONAL INFORMATION.	Plastic Limit Water Content Liquid Limit			WL (First Encountered)		Fill	
	[FINES CONTENT %]		WL (Completion)		Possible Fill		
		BOTTOM OF CASING		WL (Estimated Seasonal High Water)		Probable Fill	
		LOSS OF CIRCULATION					
		CALIBRATED PENETROMETER		WL (Stabilized)		WR/Rock	

APPENDIX B – Field Operations

Reference Notes for Boring Logs

Subsurface Exploration Procedure: Standard Penetration Testing (SPT)

Boring Logs B-01, B-02, SS-01, SS-02, and SWM-01 through SWM-10



REFERENCE NOTES FOR BORING LOGS

MATERIAL^{1,2}

	ASPHALT
	CONCRETE
	GRAVEL
	TOPSOIL
	VOID
	BRICK
	AGGREGATE BASE COURSE
	GW WELL-GRADED GRAVEL gravel-sand mixtures, little or no fines
	GP POORLY-GRADED GRAVEL gravel-sand mixtures, little or no fines
	GM SILTY GRAVEL gravel-sand-silt mixtures
	GC CLAYEY GRAVEL gravel-sand-clay mixtures
	SW WELL-GRADED SAND gravelly sand, little or no fines
	SP POORLY-GRADED SAND gravelly sand, little or no fines
	SM SILTY SAND sand-silt mixtures
	SC CLAYEY SAND sand-clay mixtures
	ML SILT non-plastic to medium plasticity
	MH ELASTIC SILT high plasticity
	CL LEAN CLAY low to medium plasticity
	CH FAT CLAY high plasticity
	OL ORGANIC SILT or CLAY non-plastic to low plasticity
	OH ORGANIC SILT or CLAY high plasticity
	PT PEAT highly organic soils

DRILLING SAMPLING SYMBOLS & ABBREVIATIONS

SS	Split Spoon Sampler	PM	Pressuremeter Test
ST	Shelby Tube Sampler	RD	Rock Bit Drilling
WS	Wash Sample	RC	Rock Core, NX, BX, AX
BS	Bulk Sample of Cuttings	REC	Rock Sample Recovery %
PA	Power Auger (no sample)	RQD	Rock Quality Designation %
HSA	Hollow Stem Auger		

PARTICLE SIZE IDENTIFICATION

DESIGNATION	PARTICLE SIZES
Boulders	12 inches (300 mm) or larger
Cobbles	3 inches to 12 inches (75 mm to 300 mm)
Gravel: Coarse	¾ inch to 3 inches (19 mm to 75 mm)
Fine	4.75 mm to 19 mm (No. 4 sieve to ¾ inch)
Sand: Coarse	2.00 mm to 4.75 mm (No. 10 to No. 4 sieve)
Medium	0.425 mm to 2.00 mm (No. 40 to No. 10 sieve)
Fine	0.074 mm to 0.425 mm (No. 200 to No. 40 sieve)
Silt & Clay ("Fines")	<0.074 mm (smaller than a No. 200 sieve)

COHESIVE SILTS & CLAYS

UNCONFINED COMPRESSION STRENGTH, QP ⁴	SPT ⁵ (BPF)	CONSISTENCY ⁷ (COHESIVE)
<0.25	<2	Very Soft
0.25 - <0.50	2 - 4	Soft
0.50 - <1.00	5 - 8	Firm
1.00 - <2.00	9 - 15	Stiff
2.00 - <4.00	16 - 30	Very Stiff
4.00 - 8.00	31 - 50	Hard
>8.00	>50	Very Hard

RELATIVE AMOUNT ⁷	COARSE GRAINED (%) ⁸	FINE GRAINED (%) ⁸
Trace	≤5	≤5
With	10 - 20	10 - 25
Adjective (ex: "Silty")	25 - 45	30 - 45

GRAVELS, SANDS & NON-COHESIVE SILTS

SPT ⁵	DENSITY
<5	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
>50	Very Dense

WATER LEVELS⁶

	WL (First Encountered)
	WL (Completion)
	WL (Seasonal High Water)
	WL (Stabilized)

FILL AND ROCK

FILL	POSSIBLE FILL	PROBABLE FILL	ROCK

¹Classifications and symbols per ASTM D 2488-17 (Visual-Manual Procedure) unless noted otherwise.

²To be consistent with general practice, "POORLY GRADED" has been removed from GP, GP-GM, GP-GC, SP, SP-SM, SP-SC soil types on the boring logs.

³Non-ASTM designations are included in soil descriptions and symbols along with ASTM symbol [Ex: (SM-FILL)].

⁴Typically estimated via pocket penetrometer or Torvane shear test and expressed in tons per square foot (tsf).

⁵Standard Penetration Test (SPT) refers to the number of hammer blows (blow count) of a 140 lb. hammer falling 30 inches on a 2 inch OD split spoon sampler required to drive the sampler 12 inches (ASTM D 1586). "N-value" is another term for "blow count" and is expressed in blows per foot (bpf). SPT correlations per 7.4.2 Method B and need to be corrected if using an auto hammer.

⁶The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in granular soils. In clay and cohesive silts, the determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally employed.

⁷Minor deviation from ASTM D 2488-17 Note 14.

⁸Percentages are estimated to the nearest 5% per ASTM D 2488-17.



SUBSURFACE EXPLORATION PROCEDURE: STANDARD PENETRATION TESTING (SPT) ASTM D 1586 Split-Barrel Sampling

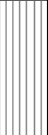
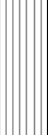
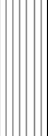
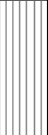
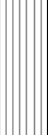
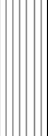
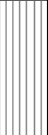
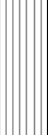
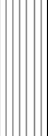
Standard Penetration Testing, or **SPT**, is the most frequently used subsurface exploration test performed worldwide. This test provides samples for identification purposes, as well as a measure of penetration resistance, or N-value. The N-Value, or blow counts, when corrected and correlated, can approximate engineering properties of soils used for geotechnical design and engineering purposes.

SPT Procedure:

- Involves driving a hollow tube (split-spoon) into the ground by dropping a 140-lb hammer a height of 30-inches at desired depth
- Recording the number of hammer blows required to drive split-spoon a distance of 18-24 inches (in 3 or 4 Increments of 6 inches each)
- Auger is advanced* and an additional SPT is performed
- One SPT typically performed for every two to five feet. An approximate 1.5 inch diameter soil sample is recovered.



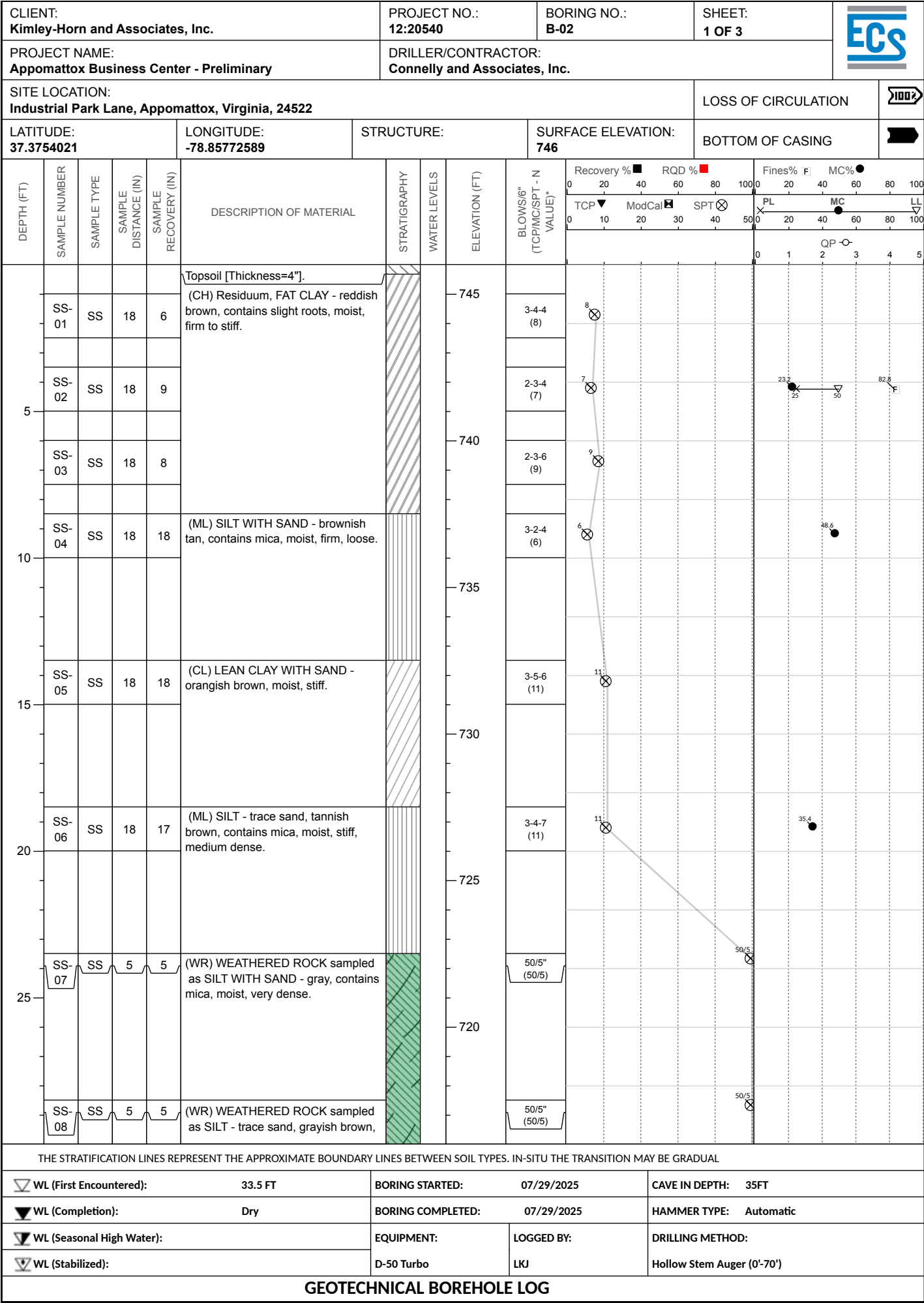
**Drilling Methods May Vary—* The predominant drilling methods used for SPT are open hole fluid rotary drilling and hollow-stem auger drilling.

CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: B-01		SHEET: 1 OF 3																																																																																																																																																																																																				
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.																																																																																																																																																																																																								
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION																																																																																																																																																																																																				
LATITUDE: 37.37612023		LONGITUDE: -78.85714635		STRUCTURE:		SURFACE ELEVATION: 771		BOTTOM OF CASING																																																																																																																																																																																																				
<table><thead><tr><th rowspan="2">DEPTH (FT)</th><th rowspan="2">SAMPLE NUMBER</th><th rowspan="2">SAMPLE TYPE</th><th rowspan="2">SAMPLE DISTANCE (IN)</th><th rowspan="2">SAMPLE RECOVERY (IN)</th><th rowspan="2">DESCRIPTION OF MATERIAL</th><th rowspan="2">STRATIGRAPHY</th><th rowspan="2">WATER LEVELS</th><th rowspan="2">ELEVATION (FT)</th><th rowspan="2">BLOWS/6" (TCP/MC/SPT - N VALUE)*</th><th colspan="2">Recovery %</th><th colspan="2">RQD %</th><th colspan="2">Fines% F</th><th colspan="2">MC%</th></tr><tr><th>TCP</th><th>ModCal</th><th>SPT</th><th>PL</th><th>MC</th><th>LL</th></tr></thead><tbody><tr><td rowspan="3">5</td><td>SS-01</td><td>SS</td><td>18</td><td>10</td><td rowspan="3">Topsoil [Thickness=4"]. (CL) Residuum, LEAN CLAY - trace sand, reddish brown, moist, firm to very stiff.</td><td rowspan="3"></td><td rowspan="3"></td><td>770.0</td><td>4-4-4 N = 8</td><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>SS-02</td><td>SS</td><td>18</td><td>13</td><td>4-6-10 N = 16</td><td>16</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>SS-03</td><td>SS</td><td>18</td><td>13</td><td>2-3-5 N = 8</td><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="2">10</td><td>SS-04</td><td>SS</td><td>18</td><td>10</td><td rowspan="2">(ML) SILT WITH SAND - tannish brown, contains slight mica, moist, loose.</td><td rowspan="2"></td><td rowspan="2"></td><td>765.0</td><td>3-3-5 N = 8</td><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="2">15</td><td>SS-05</td><td>SS</td><td>18</td><td>18</td><td rowspan="2">(ML) SILT - trace sand, blueish gray and tan, moist, medium dense to dense.</td><td rowspan="2"></td><td rowspan="2"></td><td>760.0</td><td>8-20-14 N = 34</td><td>34</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="2">20</td><td>SS-06</td><td>SS</td><td>18</td><td>17</td><td rowspan="2">(ML) SANDY SILT - blueish gray and tan, contains slight mica, moist, dense.</td><td rowspan="2"></td><td rowspan="2"></td><td>755.0</td><td>8-12-14 N = 26</td><td>26</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>SS-07</td><td>SS</td><td>18</td><td>17</td><td></td><td></td><td></td><td>750.0</td><td>13-16-19 N = 35</td><td>35</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>												DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %		RQD %		Fines% F		MC%		TCP	ModCal	SPT	PL	MC	LL	5	SS-01	SS	18	10	Topsoil [Thickness=4"]. (CL) Residuum, LEAN CLAY - trace sand, reddish brown, moist, firm to very stiff.			770.0	4-4-4 N = 8	8								SS-02	SS	18	13	4-6-10 N = 16	16										SS-03	SS	18	13	2-3-5 N = 8	8											10	SS-04	SS	18	10	(ML) SILT WITH SAND - tannish brown, contains slight mica, moist, loose.			765.0	3-3-5 N = 8	8																								15	SS-05	SS	18	18	(ML) SILT - trace sand, blueish gray and tan, moist, medium dense to dense.			760.0	8-20-14 N = 34	34																								20	SS-06	SS	18	17	(ML) SANDY SILT - blueish gray and tan, contains slight mica, moist, dense.			755.0	8-12-14 N = 26	26																									SS-07	SS	18	17				750.0	13-16-19 N = 35	35							
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %												RQD %		Fines% F		MC%																																																																																																																																																																																		
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5	SS-01	SS	18	10	Topsoil [Thickness=4"]. (CL) Residuum, LEAN CLAY - trace sand, reddish brown, moist, firm to very stiff.			770.0	4-4-4 N = 8	8																																																																																																																																																																																																		
	SS-02	SS	18	13				4-6-10 N = 16	16																																																																																																																																																																																																			
	SS-03	SS	18	13				2-3-5 N = 8	8																																																																																																																																																																																																			
10	SS-04	SS	18	10	(ML) SILT WITH SAND - tannish brown, contains slight mica, moist, loose.			765.0	3-3-5 N = 8	8																																																																																																																																																																																																		
15	SS-05	SS	18	18	(ML) SILT - trace sand, blueish gray and tan, moist, medium dense to dense.			760.0	8-20-14 N = 34	34																																																																																																																																																																																																		
20	SS-06	SS	18	17	(ML) SANDY SILT - blueish gray and tan, contains slight mica, moist, dense.			755.0	8-12-14 N = 26	26																																																																																																																																																																																																		
	SS-07	SS	18	17				750.0	13-16-19 N = 35	35																																																																																																																																																																																																		
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL																																																																																																																																																																																																												
WL (First Encountered): 48.5 FT				BORING STARTED: 07/28/2025				CAVE IN DEPTH: 41FT																																																																																																																																																																																																				
WL (Completion): Dry				BORING COMPLETED: 07/28/2025				HAMMER TYPE: Automatic																																																																																																																																																																																																				
WL (Seasonal High Water):				EQUIPMENT:		LOGGED BY:		DRILLING METHOD:																																																																																																																																																																																																				
WL (Stabilized):				D-50 Turbo		LKJ		Hollow Stem Auger (0'-70')																																																																																																																																																																																																				
GEOTECHNICAL BOREHOLE LOG																																																																																																																																																																																																												

CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: B-01		SHEET: 2 OF 3			
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.							
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION			
LATITUDE: 37.37612023		LONGITUDE: -78.85714635		STRUCTURE:		SURFACE ELEVATION: 771		BOTTOM OF CASING			
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery % ■ RQD % ■ Fines% F MC% ●	
					(ML) SANDY SILT - blueish gray and tan, contains slight mica, moist, dense. (continued)			745.0		TCP ▼ ModCal ☒ SPT ⊗	
30	SS-08	SS	18	14	(ML) SILT WITH SAND - with fine sand, blueish gray, moist, medium dense.			740.0	7-13-16 N = 29	PL ⊗ MC ● LL ▼	
35	SS-09	SS	4	3	(WR) WEATHERED ROCK sampled as POORLY GRADED SAND WITH SILT - gray, contains rock fragments, moist, very dense.			735.0	50/4" N = 50/4	QP ○	
40	SS-10	SS	18	18	(WR) WEATHERED ROCK sampled as SANDY SILT - grayish tan, moist, hard, dense.			730.0	11-19-30 N = 49		
45	SS-11	SS	17	17	(WR) WEATHERED ROCK sampled as POORLY GRADED SAND WITH SILT - trace gravel, grayish brown, contains mica, moist, very dense.			725.0	15-35-50/5" N = 85/11		
	SS-12	SS	5	5	(WR) WEATHERED ROCK sampled as SILTY SAND - trace gravel, grayish brown, moist to saturated,		▽		50/5" N = 50/5		
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL											
▽ WL (First Encountered): 48.5 FT				BORING STARTED: 07/28/2025				CAVE IN DEPTH: 41FT			
▼ WL (Completion): Dry				BORING COMPLETED: 07/28/2025				HAMMER TYPE: Automatic			
▽ WL (Seasonal High Water):				EQUIPMENT:		LOGGED BY:		DRILLING METHOD:			
▽ WL (Stabilized):				D-50 Turbo		LKJ		Hollow Stem Auger (0'-70')			
GEOTECHNICAL BOREHOLE LOG											

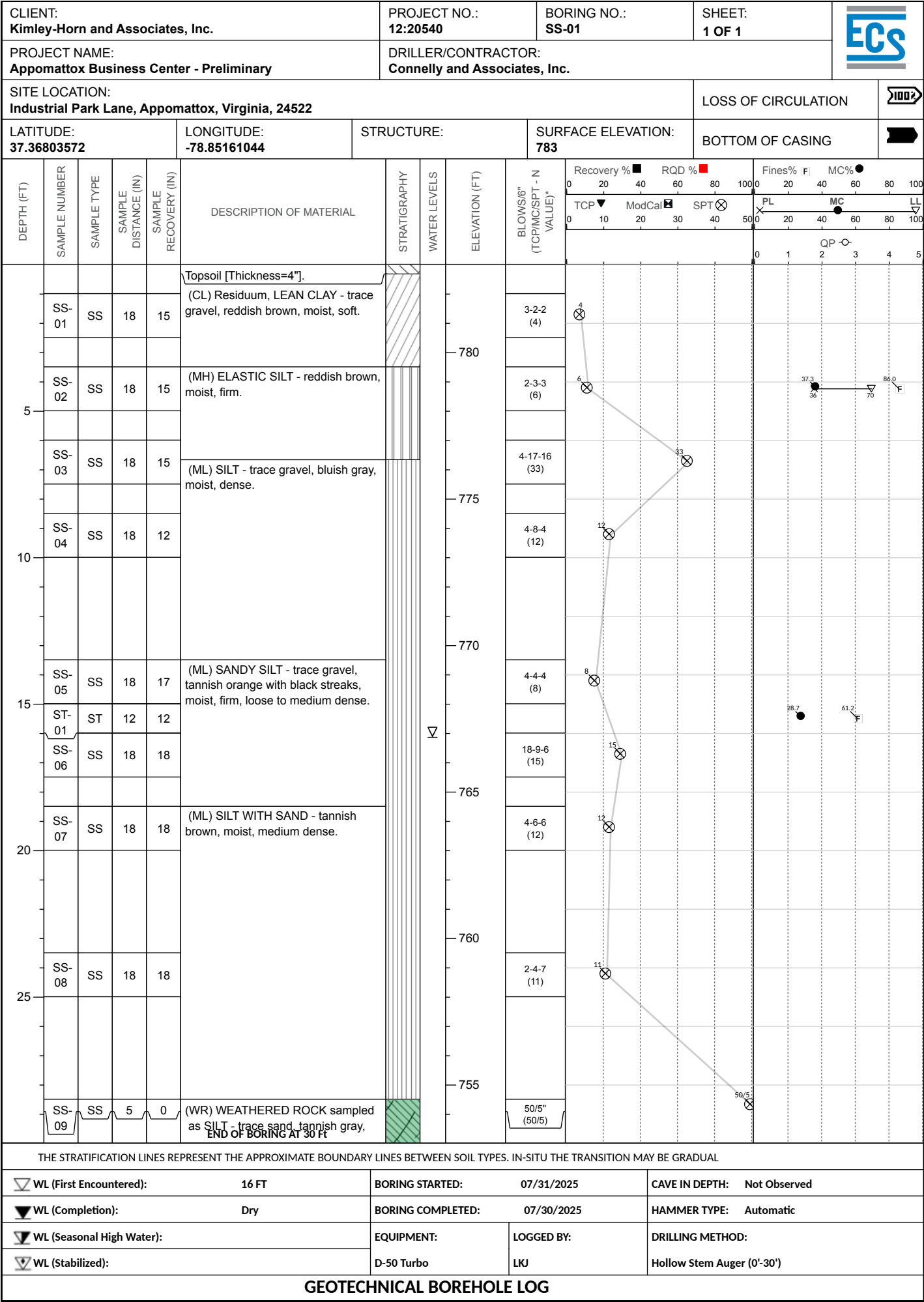
CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: B-01		SHEET: 3 OF 3			
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.							
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION			
LATITUDE: 37.37612023		LONGITUDE: -78.85714635		STRUCTURE:		SURFACE ELEVATION: 771		BOTTOM OF CASING			
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %  RQD %  Fines%  MC% 	
										TCP  ModCal  SPT 	
										PL  MC  LL 	
										QP 	
										0 1 2 3 4 5	
					(WR) WEATHERED ROCK sampled as SILTY SAND - trace gravel, grayish brown, moist to saturated, very dense. (continued)			720.0			
55	SS-13	SS	3	1	(WR) WEATHERED ROCK sampled as POORLY GRADED SAND WITH GRAVEL - brownish gray, moist, very dense.			715.0	50/3" N = 50/3		
60	SS-14	SS	8	8	(WR) WEATHERED ROCK sampled as LEAN CLAY WITH SILT - grayish orange, contains rock fragments, moist, hard.			710.0	21-50/2" N = 50/2		
65	SS-15	SS	9	3				705.0	15-50/3" N = 50/3		
	SS-16	SS	18	18	(WR) WEATHERED ROCK sampled as SILTY SAND - greenish brown, contains mica, moist to saturated, dense.				22-25-21 N = 46		
					END OF BORING AT 70 Ft						
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL											
WL (First Encountered): 48.5 FT				BORING STARTED: 07/28/2025				CAVE IN DEPTH: 41FT			
WL (Completion): Dry				BORING COMPLETED: 07/28/2025				HAMMER TYPE: Automatic			
WL (Seasonal High Water):				EQUIPMENT:		LOGGED BY:		DRILLING METHOD:			
WL (Stabilized):				D-50 Turbo		LKJ		Hollow Stem Auger (0'-70')			
GEOTECHNICAL BOREHOLE LOG											

CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: B-01A		SHEET: 1 OF 1			
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.							
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION			
LATITUDE: 37.37612023		LONGITUDE: -78.85714635		STRUCTURE:		SURFACE ELEVATION: 771		BOTTOM OF CASING			
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %  RQD %  Fines%  MC% 	
					AUGER PROBE.			770		TCP  ModCal  SPT  PL  MC  LL 	
5											
	ST-01	ST	24	24	SHELBY TUBE sampled as ELASTIC SILT WITH SAND (MH), reddish brown, moist.			765		QP  36.5 33 51 82.9 F	
					END OF BORING AT 8 Ft						
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL											
 WL (First Encountered):		Dry		BORING STARTED:		07/29/2025		CAVE IN DEPTH: Not Observed			
 WL (Completion):		Dry		BORING COMPLETED:		07/28/2025		HAMMER TYPE:			
 WL (Seasonal High Water):				EQUIPMENT:		LOGGED BY:		DRILLING METHOD:			
 WL (Stabilized):				Dietrich D50		LKJ		Hollow Stem Auger (0'-6')			
GEOTECHNICAL BOREHOLE LOG											

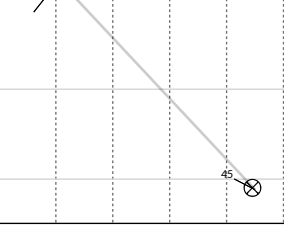


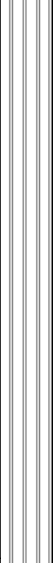
CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: B-02		SHEET: 2 OF 3				
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.								
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION				
LATITUDE: 37.3754021		LONGITUDE: -78.85772589		STRUCTURE:		SURFACE ELEVATION: 746		BOTTOM OF CASING				
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery % ■ RQD % ■ Fines% F MC% ●		
										TCP ▼ ModCal ■ SPT ⊗		
										PL MC LL		
										QP ○		
					(WR) WEATHERED ROCK sampled as SILT - trace sand, grayish brown, contains mica, moist, very dense. (continued)			715				
35	SS-09	SS	11	11	(WR) WEATHERED ROCK sampled as SILT - brownish tan, contains significant mica, moist, very hard, very dense, With clay lumps.		26-50/5" (50/5)		710		50/5	
40	SS-10	SS	4	2	(WR) WEATHERED ROCK sampled as SILT WITH SAND - grayish blue, moist, very dense, Trace pebbles.		50/4" (50/4)		705		50/4	
45	SS-11	SS	2	0			50/2" (50/2)		700		50/2	
50	SS-12	SS	4	4	(WR) WEATHERED ROCK sampled as POORLY GRADED SAND WITH GRAVEL - grayish brown, moist, very dense, Trace pebbles.		50/4" (50/4)		695		50/4	
55	SS-13	SS	11	6	(WR) WEATHERED ROCK sampled as SILT - trace sand, blueish gray, moist, very dense.		21-50/5" (50/5)		690		50/5	
	SS-14	SS	5	0			50/5" (50/5)				50/5	
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL												
WL (First Encountered):				33.5 FT		BORING STARTED:				07/29/2025		
WL (Completion):				Dry		BORING COMPLETED:				07/29/2025		
WL (Seasonal High Water):						EQUIPMENT:		D-50 Turbo		LOGGED BY:		
WL (Stabilized):										LKJ		
CAVE IN DEPTH:				35FT		HAMMER TYPE:				Automatic		
DRILLING METHOD:						Hollow Stem Auger (0'-70')						
GEOTECHNICAL BOREHOLE LOG												

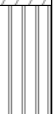
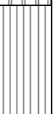
CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: B-02		SHEET: 3 OF 3			
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.							
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION			
LATITUDE: 37.3754021		LONGITUDE: -78.85772589		STRUCTURE:		SURFACE ELEVATION: 746		BOTTOM OF CASING			
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %  RQD %  Fines%  MC% 	
										TCP  ModCal  SPT  PL  MC  LL 	
65	SS-15	SS	4	0	(WR) WEATHERED ROCK sampled as SILT - trace sand, blueish gray, moist, very dense. (continued)			685	50/4" (50/4)	50/4	
								680			
	SS-16	SS	9	3	(WR) WEATHERED ROCK sampled as ELASTIC SILT - trace gravel, brown, moist, very hard.				38-50/3" (50/3)	50/3	
					END OF BORING AT 70 Ft						
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL											
 WL (First Encountered):				33.5 FT		BORING STARTED: 07/29/2025				CAVE IN DEPTH: 35FT	
 WL (Completion):				Dry		BORING COMPLETED: 07/29/2025				HAMMER TYPE: Automatic	
 WL (Seasonal High Water):						EQUIPMENT:		LOGGED BY:		DRILLING METHOD:	
 WL (Stabilized):						D-50 Turbo		LKJ		Hollow Stem Auger (0'-70')	
GEOTECHNICAL BOREHOLE LOG											



CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: SS-02		SHEET: 1 OF 2																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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LATITUDE: 37.36938712		LONGITUDE: -78.85284857		STRUCTURE:		SURFACE ELEVATION: 794		BOTTOM OF CASING																																																																																																																																																																																																																																																																																																																																																																																																																																																		
DEPTH (FT) SAMPLE NUMBER SAMPLE TYPE SAMPLE DISTANCE (IN) SAMPLE RECOVERY (IN) DESCRIPTION OF MATERIAL STRATIGRAPHY WATER LEVELS ELEVATION (FT) BLOWS/6" (TCP/MC/SPT - N VALUE)* Recovery %  RQD %  TCP  ModCal  SPT  Fines% F  MC%  PL  MC  QP  <tr><td colspan="2">5</td><td>SS-01</td><td>SS</td><td>18</td><td>12</td><td>Topsoil [Thickness=5"]. (CL) Residuum, LEAN CLAY - trace gravel, reddish - brown, contains roots, moist, firm.</td><td></td><td>790.0</td><td>3-3-3 (6)</td><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="2">5</td><td>SS-02</td><td>SS</td><td>18</td><td>14</td><td>(CL) LEAN CLAY - reddish - brown, moist, firm to stiff.</td><td></td><td>790.0</td><td>2-3-4 (7)</td><td>7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="2">5</td><td>SS-03</td><td>SS</td><td>18</td><td>13</td><td></td><td></td><td></td><td>2-3-7 (10)</td><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="2">10</td><td>SS-04</td><td>SS</td><td>18</td><td>16</td><td>(ML) SILT - trace sand, orangish - brown with black laminations, moist, loose.</td><td></td><td>785.0</td><td>2-3-4 (7)</td><td>7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="2">10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="2">15</td><td>SS-05</td><td>SS</td><td>18</td><td>12</td><td></td><td></td><td>780.0</td><td>2-3-4 (7)</td><td>7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="2">15</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="2">20</td><td>SS-06</td><td>SS</td><td>18</td><td>18</td><td>(ML) SILT WITH SAND - with fine sand, orangish - brown with black laminations, contains mica, moist, medium dense.</td><td></td><td>775.0</td><td>3-4-11 (15)</td><td>15</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="2">20</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="2">25</td><td>SS-07</td><td>SS</td><td>18</td><td>18</td><td>(CL) LEAN CLAY - trace sand, orangish - brown to grey mottled, contains mica, moist, firm.</td><td></td><td>770.0</td><td>2-3-4 (7)</td><td>7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="2">25</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="2"></td><td>SS-08</td><td>SS</td><td>18</td><td>18</td><td>(ML) SANDY SILT - trace gravel, tan - brown mottled, contains slight mica,</td><td></td><td>765.0</td><td>1-2-6 (8)</td><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="2"></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="22">THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL</td></tr> <tr><td colspan="4"> WL (First Encountered):</td><td colspan="4">Dry</td><td colspan="4">BORING STARTED:</td><td colspan="4">07/31/2025</td><td colspan="4">CAVE IN DEPTH:</td><td colspan="4">22FT</td></tr> <tr><td colspan="4"> WL (Completion):</td><td colspan="4">Dry</td><td colspan="4">BORING COMPLETED:</td><td colspan="4">07/31/2025</td><td colspan="4">HAMMER TYPE:</td><td colspan="4">Automatic</td></tr> <tr><td colspan="4"> WL (Seasonal High Water):</td><td colspan="4"></td><td colspan="4">EQUIPMENT:</td><td colspan="4">LOGGED BY:</td><td colspan="4">DRILLING METHOD:</td></tr> <tr><td colspan="4"> WL (Stabilized):</td><td colspan="4"></td><td colspan="4">D-50 Turbo</td><td colspan="4">LKJ</td><td colspan="4">Hollow Stem Auger (0'-35')</td></tr> <tr><td colspan="22">GEOTECHNICAL BOREHOLE LOG</td></tr>												5		SS-01	SS	18	12	Topsoil [Thickness=5"]. (CL) Residuum, LEAN CLAY - trace gravel, reddish - brown, contains roots, moist, firm.		790.0	3-3-3 (6)	6													5		SS-02	SS	18	14	(CL) LEAN CLAY - reddish - brown, moist, firm to stiff.		790.0	2-3-4 (7)	7													5		SS-03	SS	18	13				2-3-7 (10)	10													10		SS-04	SS	18	16	(ML) SILT - trace sand, orangish - brown with black laminations, moist, loose.		785.0	2-3-4 (7)	7													10																							15		SS-05	SS	18	12			780.0	2-3-4 (7)	7													15																							20		SS-06	SS	18	18	(ML) SILT WITH SAND - with fine sand, orangish - brown with black laminations, contains mica, moist, medium dense.		775.0	3-4-11 (15)	15													20																							25		SS-07	SS	18	18	(CL) LEAN CLAY - trace sand, orangish - brown to grey mottled, contains mica, moist, firm.		770.0	2-3-4 (7)	7													25																									SS-08	SS	18	18	(ML) SANDY SILT - trace gravel, tan - brown mottled, contains slight mica,		765.0	1-2-6 (8)	8																																				THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL																						 WL (First Encountered):				Dry				BORING STARTED:				07/31/2025				CAVE IN DEPTH:				22FT				 WL (Completion):				Dry				BORING COMPLETED:				07/31/2025				HAMMER TYPE:				Automatic				 WL (Seasonal High Water):								EQUIPMENT:				LOGGED BY:				DRILLING METHOD:				 WL (Stabilized):								D-50 Turbo				LKJ				Hollow Stem Auger (0'-35')				GEOTECHNICAL BOREHOLE LOG																					
5		SS-01	SS	18	12	Topsoil [Thickness=5"]. (CL) Residuum, LEAN CLAY - trace gravel, reddish - brown, contains roots, moist, firm.		790.0	3-3-3 (6)	6																																																																																																																																																																																																																																																																																																																																																																																																																																																
5		SS-02	SS	18	14	(CL) LEAN CLAY - reddish - brown, moist, firm to stiff.		790.0	2-3-4 (7)	7																																																																																																																																																																																																																																																																																																																																																																																																																																																
5		SS-03	SS	18	13				2-3-7 (10)	10																																																																																																																																																																																																																																																																																																																																																																																																																																																
10		SS-04	SS	18	16	(ML) SILT - trace sand, orangish - brown with black laminations, moist, loose.		785.0	2-3-4 (7)	7																																																																																																																																																																																																																																																																																																																																																																																																																																																
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15		SS-05	SS	18	12			780.0	2-3-4 (7)	7																																																																																																																																																																																																																																																																																																																																																																																																																																																
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20		SS-06	SS	18	18	(ML) SILT WITH SAND - with fine sand, orangish - brown with black laminations, contains mica, moist, medium dense.		775.0	3-4-11 (15)	15																																																																																																																																																																																																																																																																																																																																																																																																																																																
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25		SS-07	SS	18	18	(CL) LEAN CLAY - trace sand, orangish - brown to grey mottled, contains mica, moist, firm.		770.0	2-3-4 (7)	7																																																																																																																																																																																																																																																																																																																																																																																																																																																
25																																																																																																																																																																																																																																																																																																																																																																																																																																																										
		SS-08	SS	18	18	(ML) SANDY SILT - trace gravel, tan - brown mottled, contains slight mica,		765.0	1-2-6 (8)	8																																																																																																																																																																																																																																																																																																																																																																																																																																																
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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 WL (Completion):				Dry				BORING COMPLETED:				07/31/2025				HAMMER TYPE:				Automatic																																																																																																																																																																																																																																																																																																																																																																																																																																						
 WL (Seasonal High Water):								EQUIPMENT:				LOGGED BY:				DRILLING METHOD:																																																																																																																																																																																																																																																																																																																																																																																																																																										
 WL (Stabilized):								D-50 Turbo				LKJ				Hollow Stem Auger (0'-35')																																																																																																																																																																																																																																																																																																																																																																																																																																										
GEOTECHNICAL BOREHOLE LOG																																																																																																																																																																																																																																																																																																																																																																																																																																																										

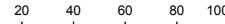
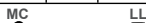
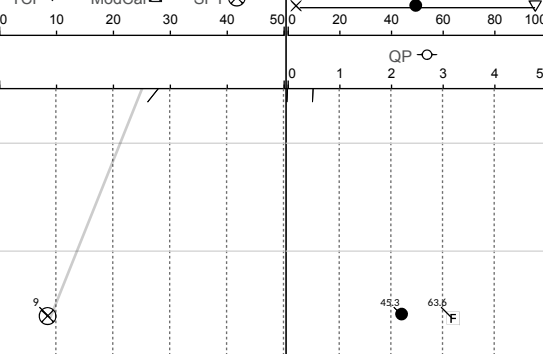
CLIENT: Kimley-Horn and Associates, Inc.					PROJECT NO.: 12:20540		BORING NO.: SS-02		SHEET: 2 OF 2				
PROJECT NAME: Appomattox Business Center - Preliminary					DRILLER/CONTRACTOR: Connelly and Associates, Inc.								
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522									LOSS OF CIRCULATION				
LATITUDE: 37.36938712			LONGITUDE: -78.85284857		STRUCTURE:		SURFACE ELEVATION: 794		BOTTOM OF CASING				
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %  RQD %  Fines%  MC% 			
										TCP  ModCal  SPT 			
					(ML) SANDY SILT - trace gravel, tan - brown mottled, contains slight mica, moist, loose, 1" layer of grey thinly bedded rock 3" into sample. (continued)								
	SS-09	SS	18	18	(SC) CLAYEY SAND WITH GRAVEL - orangish - brown with black/white veins, moist, dense.			760.0	14-20-25 (45)				
END OF BORING AT 35 Ft													
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL													
 WL (First Encountered): Dry					BORING STARTED: 07/31/2025		CAVE IN DEPTH: 22FT						
 WL (Completion): Dry					BORING COMPLETED: 07/31/2025		HAMMER TYPE: Automatic						
 WL (Seasonal High Water):					EQUIPMENT:		LOGGED BY:		DRILLING METHOD:				
 WL (Stabilized):					D-50 Turbo		LKJ		Hollow Stem Auger (0'-35')				
GEOTECHNICAL BOREHOLE LOG													

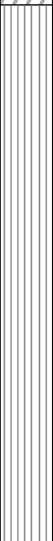
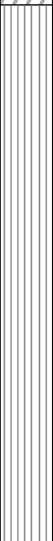
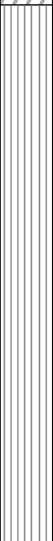
CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: SWM-01		SHEET: 1 OF 1			
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.							
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION			
LATITUDE: 37.37505351		LONGITUDE: -78.85896937		STRUCTURE:		SURFACE ELEVATION: 737		BOTTOM OF CASING			
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %  RQD %  Fines%  MC% 	
										TCP  ModCal  SPT 	
										PL  MC  LL 	
										QP 	
										0 1 2 3 4 5	
5	SS-01	SS	18	8	Topsoil [Thickness=3"].			735	3-5-5 (10)		
					(CL) Residuum, SANDY LEAN CLAY - reddish brown to orangish red, contains roots, moist, stiff.						
	SS-02	SS	18	15					4-5-8 (13)		
	SS-03	SS	18	13	(MH) ELASTIC SILT - gray to tan, moist, stiff.			730	4-6-9 (15)		
10	SS-04	SS	18	12					5-6-7 (13)		
15	SS-05	SS	18	14					12-14-14 (28)		
20	SS-06	SS	18	15	As above but trace sand, contains mica.				11-18-18 (36)		
	SS-07	SS	18	18	(MH) ELASTIC SILT WITH GRAVEL - grayish orange to tannish black, moist, hard.				9-11-23 (34)		
					END OF BORING AT 25 Ft						
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL											
 WL (First Encountered):		Dry		BORING STARTED:		07/29/2025		CAVE IN DEPTH:		12FT	
 WL (Completion):		Dry		BORING COMPLETED:		07/29/2025		HAMMER TYPE:		Automatic	
 WL (Seasonal High Water):				EQUIPMENT:		LOGGED BY:		DRILLING METHOD:			
 WL (Stabilized):				D-50 Turbo		LKJ		Hollow Stem Auger (0'-25')			
GEOTECHNICAL BOREHOLE LOG											

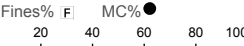
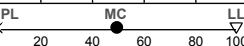
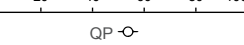
CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: SWM-02		SHEET: 1 OF 1			
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.							
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION			
LATITUDE: 37.3745581		LONGITUDE: -78.85794202		STRUCTURE:		SURFACE ELEVATION: 729		BOTTOM OF CASING			
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %  RQD % 	Fines%  MC% 
					Topsoil [Thickness=3"]					TCP  ModCal  SPT 	PL  MC  LL 
5	SS-01	SS	18	12	(CL) Residium, LEAN CLAY - reddish - brown, contains significant roots, moist, firm.				4-3-3 (6)	6 	
	SS-02	SS	18	11	(CL) Residium, LEAN CLAY - trace gravel, reddish - brown, contains mica, moist, firm.			725.0	3-3-4 (7)	7 	
	SS-03	SS	18	18	(CL) GRAVELLY LEAN CLAY - reddish - brown and white, contains rock fragments, moist, stiff.				4-6-8 (14)	14 	
10	SS-04	SS	18	7	(CL) LEAN CLAY - reddish - brown, firm.			720.0	1-3-4 (7)	7 	28.4 
15	SS-05	SS	18	18	(MH) ELASTIC SILT WITH SAND - reddish - brown with black laminations, contains slight mica, firm.			715.0	2-2-4 (6)	6 	38.4  32  64 
20	SS-06	SS	18	18	(ML) SILT WITH SAND - greyish - brown, moist, medium dense.			710.0	6-7-11 (18)	18 	
	SS-07	SS	18	5	(WR) WEATHERED ROCK sampled as SILT WITH SAND - blueish/purpleish - grey, moist, very dense.			705.0	50/5" (50+)	50 	
					END OF BORING AT 25 Ft						
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL											
 WL (First Encountered):				Dry		BORING STARTED: 07/30/2025				CAVE IN DEPTH: 14FT	
 WL (Completion):				Dry		BORING COMPLETED: 07/29/2025				HAMMER TYPE: Automatic	
 WL (Seasonal High Water):						EQUIPMENT:		LOGGED BY:		DRILLING METHOD:	
 WL (Stabilized):						D-50 Turbo		LKJ		Hollow Stem Auger (0'-25')	
GEOTECHNICAL BOREHOLE LOG											

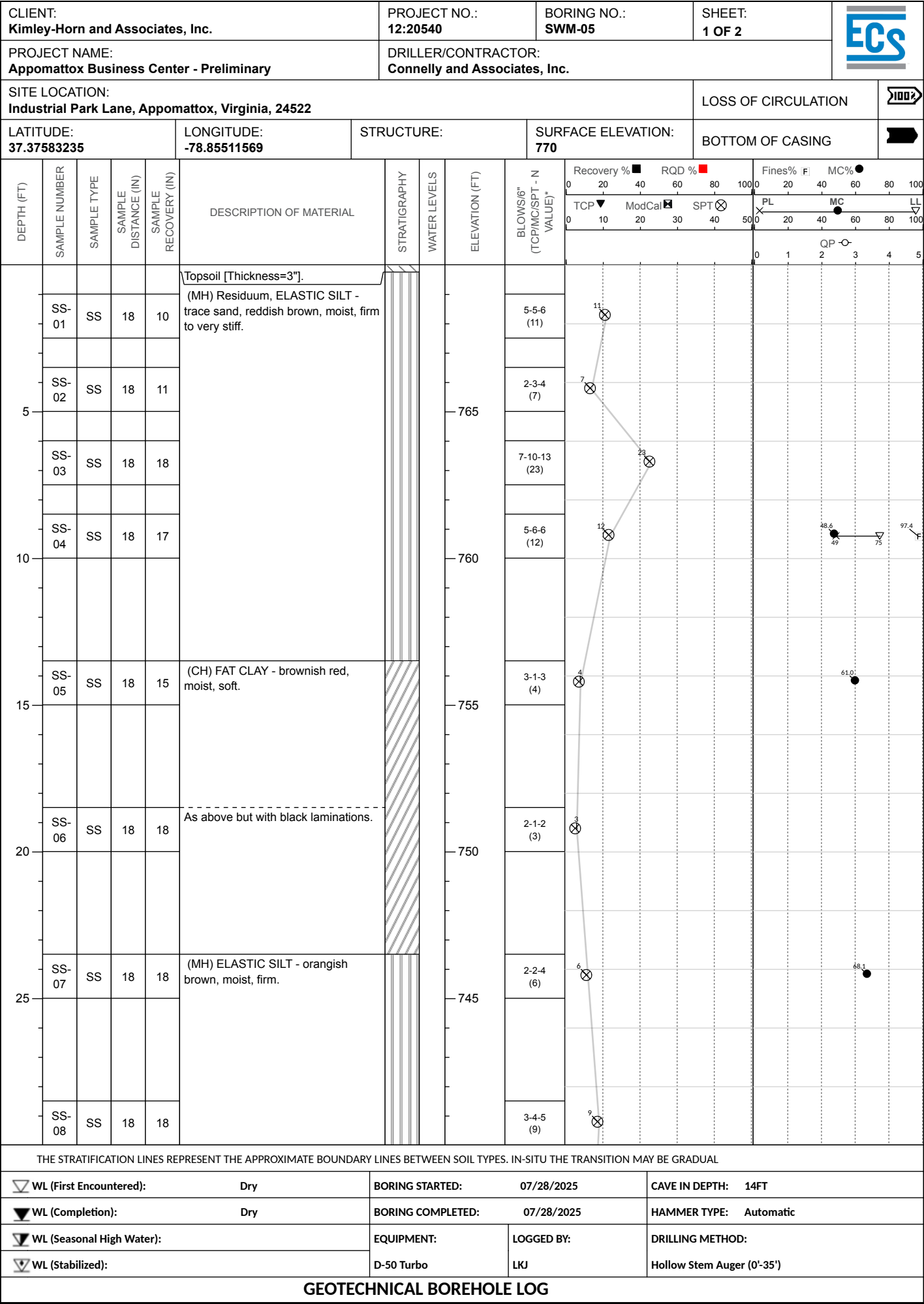
CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: SWM-02A		SHEET: 1 OF 1			
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.							
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION			
LATITUDE: 37.3745581		LONGITUDE: -78.85794202		STRUCTURE:		SURFACE ELEVATION: 729		BOTTOM OF CASING			
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery % ■ RQD % ■ Fines% F MC% ●	
										TCP ▼ ModCal ☒ SPT ⊗	
										PL MC LL	
										QP ○	
5					AUGER PROBE.			725			
								720			
15	SS-01	SS	18	15	(MH) Residuum, ELASTIC SILT WITH SAND - reddish brown, moist, firm.			715	2-2-4 (6)	6	51.8
	ST-01	ST	24	24							
	SS-02	SS	18	17	(ML) SILT - light brown, contains significant mica, moist, medium dense.				4-7-7 (14)	14	40.4 37 71.4 64
					END OF BORING AT 17 Ft						
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL											
WL (First Encountered):		Dry		BORING STARTED:		07/30/2025		CAVE IN DEPTH: Not Observed			
WL (Completion):		Dry		BORING COMPLETED:		07/30/2025		HAMMER TYPE: Automatic			
WL (Seasonal High Water):				EQUIPMENT:		LOGGED BY:		DRILLING METHOD:			
WL (Stabilized):				Dietrich D50		LKJ		Hollow Stem Auger (0'-17')			
GEOTECHNICAL BOREHOLE LOG											

CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: SWM-03		SHEET: 1 OF 2																																																															
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.																																																																			
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION																																																															
LATITUDE: 37.37486765		LONGITUDE: -78.85933001		STRUCTURE:		SURFACE ELEVATION: 722		BOTTOM OF CASING																																																															
<table><tr><td rowspan="2">DEPTH (FT)</td><td rowspan="2">SAMPLE NUMBER</td><td rowspan="2">SAMPLE TYPE</td><td rowspan="2">SAMPLE DISTANCE (IN)</td><td rowspan="2">SAMPLE RECOVERY (IN)</td><td rowspan="2">DESCRIPTION OF MATERIAL</td><td rowspan="2">STRATIGRAPHY</td><td rowspan="2">WATER LEVELS</td><td rowspan="2">ELEVATION (FT)</td><td rowspan="2">BLOWS/6" (TCP/MC/SPT - N VALUE)*</td><td colspan="2">Recovery %  RQD % </td><td colspan="2">Fines%  MC% </td></tr><tr><td colspan="2">TCP  ModCal  SPT </td><td colspan="2">PL  MC  LL </td></tr><tr><td colspan="10"></td><td colspan="2">0 20 40 60 80 100</td><td colspan="2">0 20 40 60 80 100</td></tr><tr><td colspan="10"></td><td colspan="2">0 10 20 30 40 50</td><td colspan="2">0 20 40 60 80 100</td></tr><tr><td colspan="10"></td><td colspan="2">0 1 2 3 4 5</td><td colspan="2"></td></tr></table>												DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %  RQD % 		Fines%  MC% 		TCP  ModCal  SPT 		PL  MC  LL 												0 20 40 60 80 100		0 20 40 60 80 100												0 10 20 30 40 50		0 20 40 60 80 100												0 1 2 3 4 5			
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %  RQD % 												Fines%  MC% 																																																	
										TCP  ModCal  SPT 		PL  MC  LL 																																																											
										0 20 40 60 80 100		0 20 40 60 80 100																																																											
										0 10 20 30 40 50		0 20 40 60 80 100																																																											
										0 1 2 3 4 5																																																													
5	SS-01	SS	18	13	Topsoil [Thickness=3"].			720	4-5-5 (10)	10																																																													
					(CL) Residuum, LEAN CLAY - reddish brown, contains roots, moist.																																																																		
	SS-02	SS	18	13	As above but with trace mica.				5-4-5 (9)	9		12.6																																																											
	SS-03	SS	18	13	(ML) SILT - trace sand, tannish gray to tannish brown, moist, medium dense.			715	5-9-9 (18)	18																																																													
	SS-04	SS	18	10						3-5-6 (11)	11		9.9																																																										
15	SS-05	SS	18	10					5-9-10 (19)	19																																																													
20	SS-06	SS	18	17	As above but contains slight mica.				6-7-10 (17)	17																																																													
	SS-07	SS	18	16	(ML) SILT WITH SAND - blueish gray with black veins, moist, medium dense.				6-11-17 (28)	28																																																													
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL																																																																							
 WL (First Encountered):				Dry		BORING STARTED: 07/29/2025				CAVE IN DEPTH: 16.5FT																																																													
 WL (Completion):				Dry		BORING COMPLETED: 07/29/2025				HAMMER TYPE: Automatic																																																													
 WL (Seasonal High Water):						EQUIPMENT:		LOGGED BY:		DRILLING METHOD:																																																													
 WL (Stabilized):						D-50 Turbo		LKJ		Hollow Stem Auger (0'-30')																																																													
GEOTECHNICAL BOREHOLE LOG																																																																							

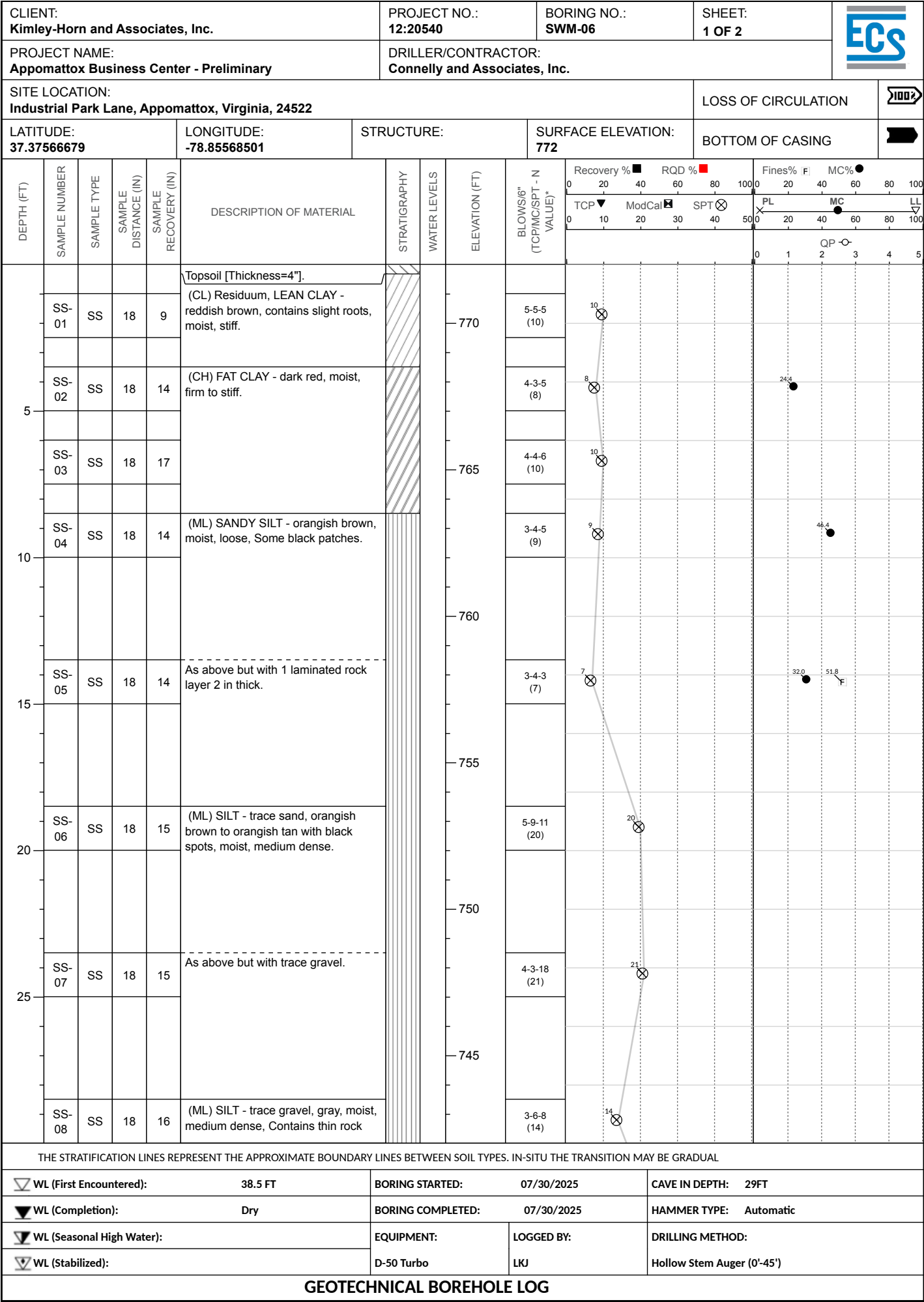
CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: SWM-03		SHEET: 2 OF 2			
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.							
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION			
LATITUDE: 37.37486765		LONGITUDE: -78.85933001		STRUCTURE:		SURFACE ELEVATION: 722		BOTTOM OF CASING			
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %  RQD %  Fines%  MC% 	
					(ML) SILT WITH SAND - blueish gray with black veins, moist, medium dense. (continued)			695			
	SS-08	SS	18	18	(ML) SANDY SILT - brown, contains mica, moist, loose.				3-4-5 (9)		
					END OF BORING AT 30 Ft						
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL											
 WL (First Encountered):				Dry		BORING STARTED: 07/29/2025				CAVE IN DEPTH: 16.5FT	
 WL (Completion):				Dry		BORING COMPLETED: 07/29/2025				HAMMER TYPE: Automatic	
 WL (Seasonal High Water):						EQUIPMENT:		LOGGED BY:		DRILLING METHOD:	
 WL (Stabilized):						D-50 Turbo		LKJ		Hollow Stem Auger (0'-30')	
GEOTECHNICAL BOREHOLE LOG											

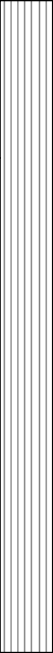
CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: SWM-04		SHEET: 1 OF 2																																																																																																																																																																																																																																																																																																																												
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.																																																																																																																																																																																																																																																																																																																																
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION																																																																																																																																																																																																																																																																																																																												
LATITUDE: 37.37418827		LONGITUDE: -78.85800679		STRUCTURE:		SURFACE ELEVATION: 719		BOTTOM OF CASING																																																																																																																																																																																																																																																																																																																												
<table><thead><tr><th rowspan="2">DEPTH (FT)</th><th rowspan="2">SAMPLE NUMBER</th><th rowspan="2">SAMPLE TYPE</th><th rowspan="2">SAMPLE DISTANCE (IN)</th><th rowspan="2">SAMPLE RECOVERY (IN)</th><th rowspan="2">DESCRIPTION OF MATERIAL</th><th rowspan="2">STRATIGRAPHY</th><th rowspan="2">WATER LEVELS</th><th rowspan="2">ELEVATION (FT)</th><th rowspan="2">BLOWS/6" (TCP/MC/SPT - N VALUE)*</th><th colspan="3">Recovery %</th><th colspan="3">RQD %</th><th colspan="2">Fines% F</th><th colspan="2">MC%</th></tr><tr><th>TCP</th><th>ModCal</th><th>SPT</th><th>PL</th><th>MC</th><th>LL</th><th>QP</th><th>MC</th><th>LL</th></tr></thead><tbody><tr><td></td><td></td><td></td><td></td><td></td><td>Topsoil [Thickness=6"].</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="3">5</td><td>SS-01</td><td>SS</td><td>18</td><td>10</td><td rowspan="3">(CL) Residuum, LEAN CLAY - reddish - brown, contains significant roots, firm.</td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3">715.0</td><td>3-4-4 (8)</td><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>SS-02</td><td>SS</td><td>18</td><td>11</td><td>5-4-5 (9)</td><td>9</td><td></td><td></td><td></td><td></td><td></td><td></td><td>20.2</td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="3">10</td><td>SS-03</td><td>SS</td><td>18</td><td>18</td><td rowspan="3">(CH) SANDY FAT CLAY - reddish - brown, stiff.</td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3">710.0</td><td>5-5-7 (12)</td><td>12</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>SS-04</td><td>SS</td><td>18</td><td>15</td><td>5-4-5 (9)</td><td>9</td><td></td><td></td><td></td><td></td><td></td><td></td><td>27.4</td><td>65.9</td><td></td><td></td><td></td></tr><tr><td rowspan="3">15</td><td></td><td></td><td></td><td></td><td rowspan="3">(ML) SILT WITH SAND - tannish - grey to brown, moist, medium dense to very dense.</td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3">705.0</td><td>6-31-42 (73)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>SS-05</td><td>SS</td><td>18</td><td>18</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td rowspan="3">20</td><td></td><td></td><td></td><td></td><td rowspan="3">(WR) WEATHERED ROCK sampled as SILT WITH SAND - blueish/purpleish - grey, moist, very</td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3">700.0</td><td>5-5-6 (11)</td><td>11</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>SS-06</td><td>SS</td><td>18</td><td>16</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>18.5</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>SS-07</td><td>SS</td><td>18</td><td>17</td><td></td><td></td><td></td><td>695.0</td><td>22-33-50/5" (50+)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>												DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %			RQD %			Fines% F		MC%		TCP	ModCal	SPT	PL	MC	LL	QP	MC	LL						Topsoil [Thickness=6"].																5	SS-01	SS	18	10	(CL) Residuum, LEAN CLAY - reddish - brown, contains significant roots, firm.			715.0	3-4-4 (8)	8																												SS-02	SS	18	11	5-4-5 (9)	9							20.2					10	SS-03	SS	18	18	(CH) SANDY FAT CLAY - reddish - brown, stiff.			710.0	5-5-7 (12)	12																											SS-04	SS	18	15	5-4-5 (9)	9							27.4	65.9				15					(ML) SILT WITH SAND - tannish - grey to brown, moist, medium dense to very dense.			705.0	6-31-42 (73)																													SS-05	SS	18	18															20					(WR) WEATHERED ROCK sampled as SILT WITH SAND - blueish/purpleish - grey, moist, very			700.0	5-5-6 (11)	11																												SS-06	SS	18	16									18.5																												SS-07	SS	18	17				695.0	22-33-50/5" (50+)											
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %												RQD %			Fines% F		MC%																																																																																																																																																																																																																																																																																																									
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GEOTECHNICAL BOREHOLE LOG																																																																																																																																																																																																																																																																																																																																				

CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: SWM-04		SHEET: 2 OF 2			
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.							
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION			
LATITUDE: 37.37418827		LONGITUDE: -78.85800679		STRUCTURE:		SURFACE ELEVATION: 719		BOTTOM OF CASING			
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %  RQD %  Fines%  MC% 	
					(WR) WEATHERED ROCK sampled as SILT WITH SAND - blueish/purpleish - grey, moist, very dense. (continued)					TCP  ModCal  SPT 	
	SS-08	SS	18	17	(WR) WEATHERED ROCK sampled as POORLY GRADED SAND WITH GRAVEL - greyish - brown, very dense.			690.0	16-17-50/5" (50+)		PL  MC  LL 
					END OF BORING AT 30 Ft						
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL											
 WL (First Encountered):				28.5 FT		BORING STARTED:				07/30/2025	
 WL (Completion):				Dry		BORING COMPLETED:				07/30/2025	
 WL (Seasonal High Water):						EQUIPMENT:		LOGGED BY:		DRILLING METHOD:	
 WL (Stabilized):						D-50 Turbo		LKJ		Hollow Stem Auger (0'-30')	
GEOTECHNICAL BOREHOLE LOG											



CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: SWM-05		SHEET: 2 OF 2			
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.							
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION			
LATITUDE: 37.37583235		LONGITUDE: -78.85511569		STRUCTURE:		SURFACE ELEVATION: 770		BOTTOM OF CASING			
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %  RQD %  Fines%  MC%  TCP  ModCal  SPT  PL  MC  LL  0 1 2 3 4 5	
					(MH) ELASTIC SILT - orangish brown, moist, firm. (continued)						
	SS-09	SS	18	18	(MH) ELASTIC SILT - tannish brown with black striations, moist, firm.			735	3-3-4 (7)		
					END OF BORING AT 35 Ft						
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL											
 WL (First Encountered):				Dry		BORING STARTED:				07/28/2025	
 WL (Completion):				Dry		BORING COMPLETED:				07/28/2025	
 WL (Seasonal High Water):						EQUIPMENT:		LOGGED BY:		DRILLING METHOD:	
 WL (Stabilized):						D-50 Turbo		LKJ		Hollow Stem Auger (0'-35')	
GEOTECHNICAL BOREHOLE LOG											



CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: SWM-06		SHEET: 2 OF 2				
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.								
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION				
LATITUDE: 37.37566679		LONGITUDE: -78.85568501		STRUCTURE:		SURFACE ELEVATION: 772		BOTTOM OF CASING				
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery % ■ RQD % ■ Fines% F MC% ●		
					(ML) SILT - trace gravel, gray, moist, medium dense, Contains thin rock layers. (continued)			740		TCP ▼ ModCal ■ SPT ⊗		
35	SS-09	SS	18	16	(ML) SILT WITH SAND - bluish gray, saturated, medium dense to dense.		8-18-11 (29)				PL MC LL	
									735		QP ○	
40	SS-10	SS	18	18			9-16-26 (42)					
									730			
	SS-11	SS	17	17	(WR) WEATHERED ROCK sampled as SILT WITH SAND - bluish gray, saturated, very dense.				10-32-50/5" (82/11)			
					END OF BORING AT 45 Ft							
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL												
 WL (First Encountered):		38.5 FT		BORING STARTED:		07/30/2025		CAVE IN DEPTH: 29FT				
 WL (Completion):		Dry		BORING COMPLETED:		07/30/2025		HAMMER TYPE: Automatic				
 WL (Seasonal High Water):				EQUIPMENT:		LOGGED BY:		DRILLING METHOD:				
 WL (Stabilized):				D-50 Turbo		LKJ		Hollow Stem Auger (0'-45')				
GEOTECHNICAL BOREHOLE LOG												

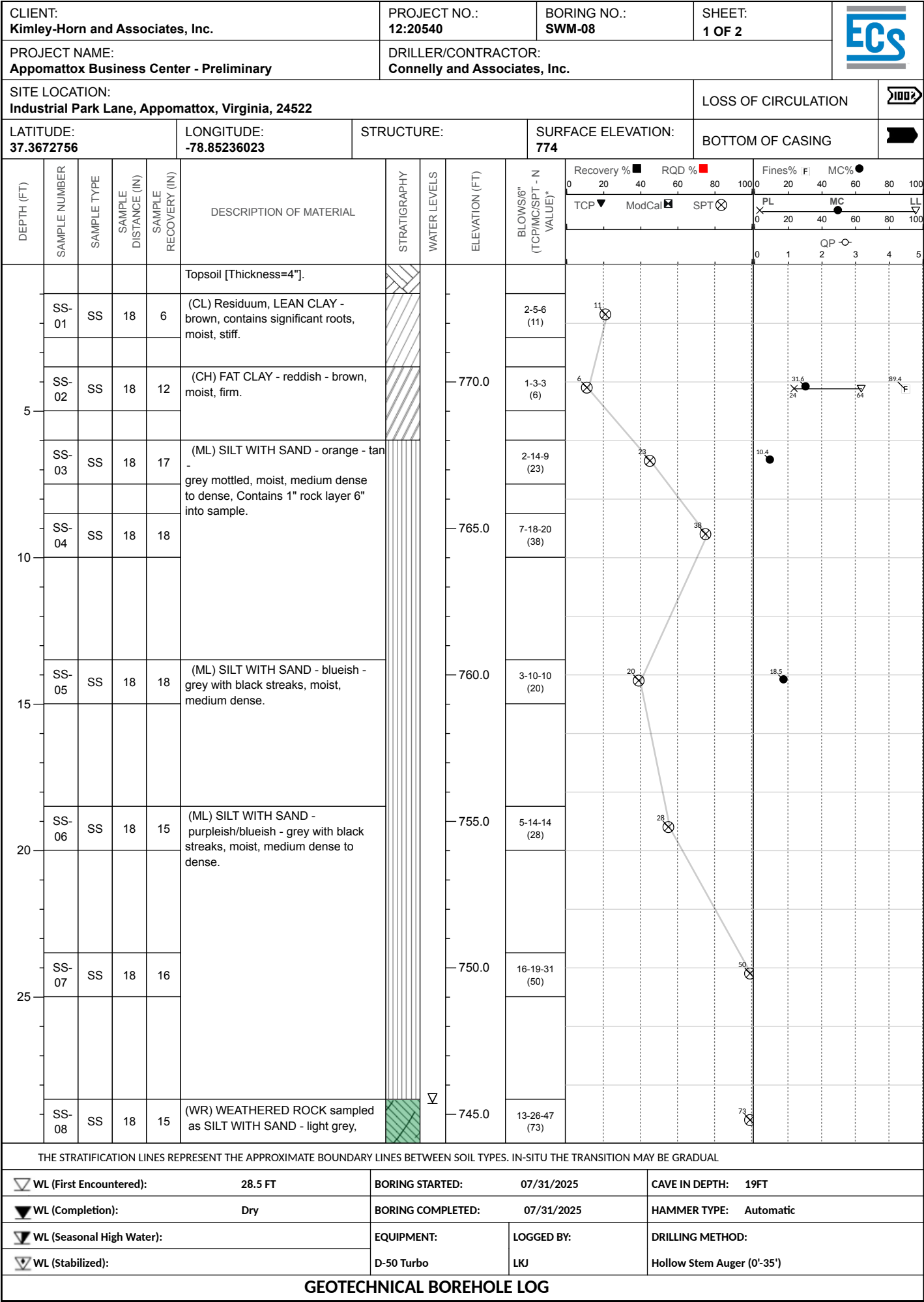
CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: SWM-07		SHEET: 1 OF 2																																																	
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.																																																					
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION																																																	
LATITUDE: 37.37530614		LONGITUDE: -78.85570544		STRUCTURE:		SURFACE ELEVATION: 763		BOTTOM OF CASING																																																	
<table><tr><td rowspan="2">DEPTH (FT)</td><td rowspan="2">SAMPLE NUMBER</td><td rowspan="2">SAMPLE TYPE</td><td rowspan="2">SAMPLE DISTANCE (IN)</td><td rowspan="2">SAMPLE RECOVERY (IN)</td><td rowspan="2">DESCRIPTION OF MATERIAL</td><td rowspan="2">STRATIGRAPHY</td><td rowspan="2">WATER LEVELS</td><td rowspan="2">ELEVATION (FT)</td><td rowspan="2">BLOWS/6" (TCP/MC/SPT - N VALUE)*</td><td colspan="2">Recovery % ■ RQD % ■</td><td colspan="2">Fines% F MC% ●</td></tr><tr><td colspan="2">TCP ▼ ModCal ■ SPT ⊗</td><td colspan="2">PL MC LL</td></tr><tr><td colspan="10"></td><td colspan="2">0 20 40 60 80 100</td><td colspan="2">0 20 40 60 80 100</td></tr><tr><td colspan="10"></td><td colspan="2">0 10 20 30 40 50</td><td colspan="2">0 1 2 3 4 5</td></tr></table>												DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery % ■ RQD % ■		Fines% F MC% ●		TCP ▼ ModCal ■ SPT ⊗		PL MC LL												0 20 40 60 80 100		0 20 40 60 80 100												0 10 20 30 40 50		0 1 2 3 4 5	
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery % ■ RQD % ■												Fines% F MC% ●																																			
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										0 20 40 60 80 100		0 20 40 60 80 100																																													
										0 10 20 30 40 50		0 1 2 3 4 5																																													
5	SS-01	SS	18	11	Topsoil [Thickness=4"]. (ML) Residuum, SANDY SILT - brownish red to orangish brown, contains roots, moist, loose to medium dense.			760	4-5-6 (11)	11																																															
	SS-02	SS	18	14				6-6-10 (16)	16																																																
	SS-03	SS	18	17				3-5-9 (14)	14																																																
	10	SS-04	SS	18	16			4-4-9 (13)	13																																																
		SS-05	SS	18	15			4-4-5 (9)	9		37.4																																														
		15																																																							
	SS-06		SS	18	18			2-3-4 (7)	7			53.1 66.5 F																																													
25	SS-07	SS	18	18	(ML) SILT WITH SAND - orangish gray with black streaks, moist, medium dense.		740	4-6-6 (12)	12			42.5																																													
	SS-08	SS	18	13	(ML) SANDY SILT WITH GRAVEL - dark grayish orange, moist, dense.		735	6-10-21 (31)	31																																																

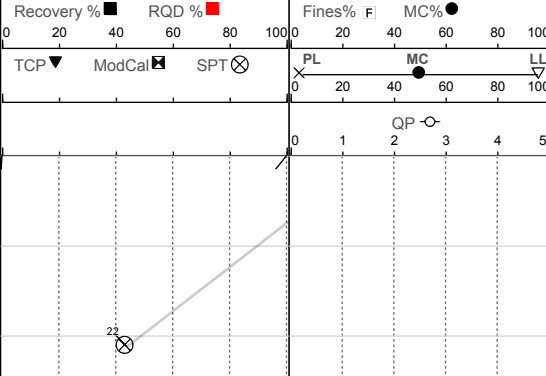
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

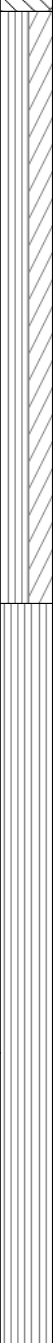
WL (First Encountered): 28.5 FT		BORING STARTED: 07/30/2025		CAVE IN DEPTH: 18FT	
WL (Completion): Dry		BORING COMPLETED: 07/30/2025		HAMMER TYPE: Automatic	
WL (Seasonal High Water):		EQUIPMENT:		LOGGED BY:	
WL (Stabilized):		D-50 Turbo		LKJ	
DRILLING METHOD: Hollow Stem Auger (0'-45')					

GEOTECHNICAL BOREHOLE LOG

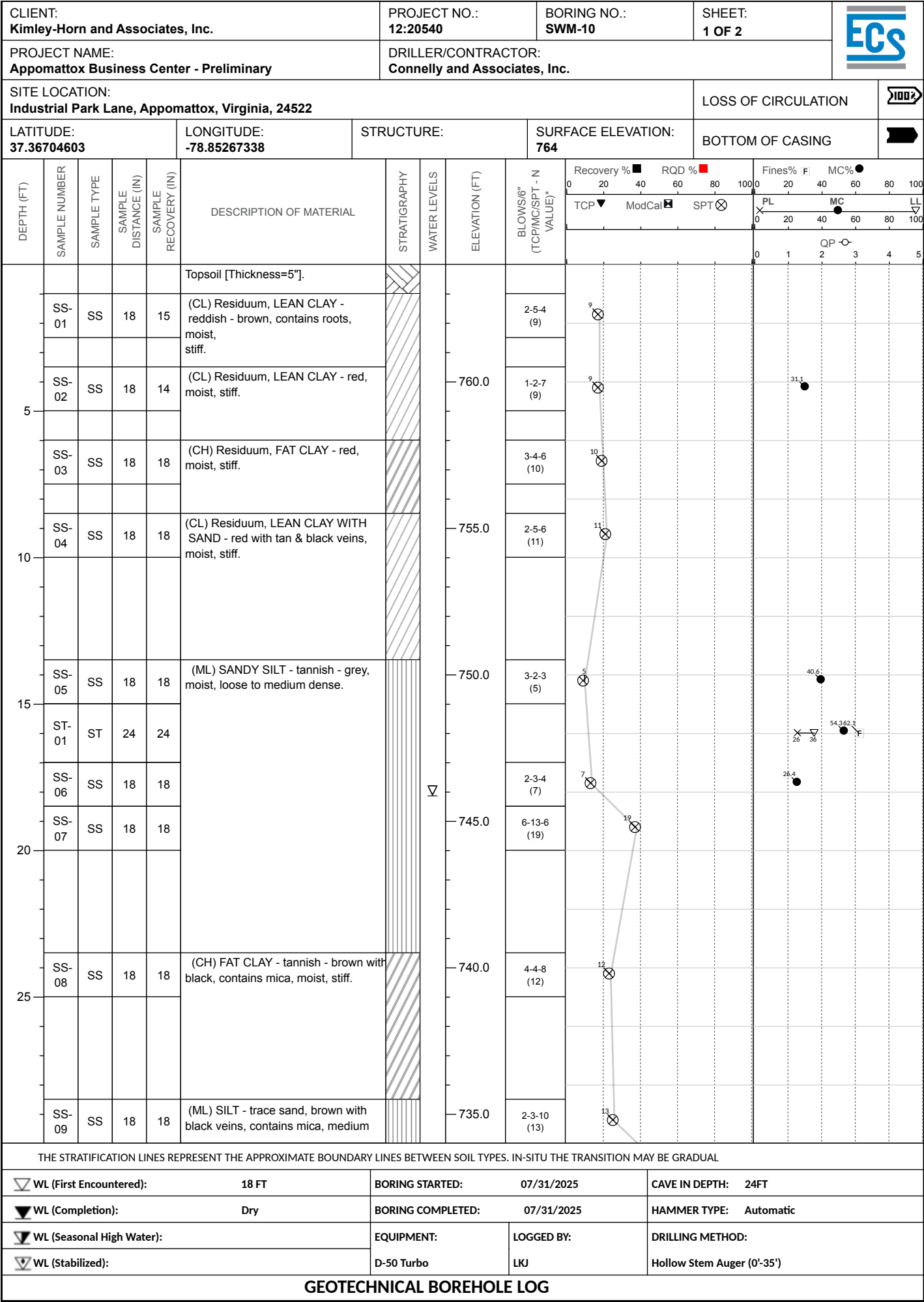
CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: SWM-07		SHEET: 2 OF 2			
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.							
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION			
LATITUDE: 37.37530614		LONGITUDE: -78.85570544		STRUCTURE:		SURFACE ELEVATION: 763		BOTTOM OF CASING			
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %  RQD %  Fines%  MC% 	
					(ML) SANDY SILT WITH GRAVEL - dark grayish orange, moist, dense. (continued)					TCP  ModCal  SPT  PL  MC  LL 	
35	SS-09	SS	10	10	(GM) SILTY GRAVEL WITH SAND - bluish gray, moist, very dense.			730	24-50/4" (50/4)	QP 	
40	SS-10	SS	18	14	(ML) SILT WITH SAND - gray to tan, moist, medium dense.			725	6-8-15 (23)	23 	
	SS-11	SS	4	4	(WR) WEATHERED ROCK sampled as SILT WITH SAND - gray to tan, moist, very dense.			720	50/4" (50/4)	50/4 	
END OF BORING AT 45 Ft											
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL											
 WL (First Encountered):				28.5 FT		BORING STARTED:				07/30/2025	
 WL (Completion):				Dry		BORING COMPLETED:				07/30/2025	
 WL (Seasonal High Water):						EQUIPMENT:		LOGGED BY:		DRILLING METHOD:	
 WL (Stabilized):						D-50 Turbo		LKJ		Hollow Stem Auger (0'-45')	
GEOTECHNICAL BOREHOLE LOG											

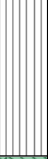
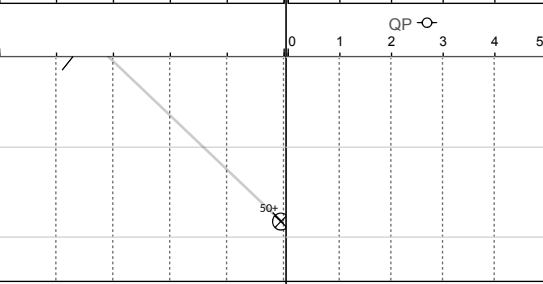


CLIENT: Kimley-Horn and Associates, Inc.					PROJECT NO.: 12:20540		BORING NO.: SWM-08		SHEET: 2 OF 2				
PROJECT NAME: Appomattox Business Center - Preliminary					DRILLER/CONTRACTOR: Connelly and Associates, Inc.								
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522									LOSS OF CIRCULATION				
LATITUDE: 37.3672756			LONGITUDE: -78.85236023		STRUCTURE:		SURFACE ELEVATION: 774		BOTTOM OF CASING				
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %  RQD %  Fines%  MC% 			
										TCP  ModCal  SPT 			
					(WR) WEATHERED ROCK sampled as SILT WITH SAND - light grey, moist, medium dense to very dense. (continued)			740.0	9-11-11 (22)				
	SS-09	SS	18	13									
					END OF BORING AT 35 Ft								
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL													
 WL (First Encountered):					28.5 FT		BORING STARTED:			07/31/2025		CAVE IN DEPTH: 19FT	
 WL (Completion):					Dry		BORING COMPLETED:			07/31/2025		HAMMER TYPE: Automatic	
 WL (Seasonal High Water):							EQUIPMENT:		LOGGED BY:		DRILLING METHOD:		
 WL (Stabilized):							D-50 Turbo		LKJ		Hollow Stem Auger (0'-35')		
GEOTECHNICAL BOREHOLE LOG													

CLIENT: Kimley-Horn and Associates, Inc.				PROJECT NO.: 12:20540		BORING NO.: SWM-09		SHEET: 1 OF 2																																																			
PROJECT NAME: Appomattox Business Center - Preliminary				DRILLER/CONTRACTOR: Connelly and Associates, Inc.																																																							
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522								LOSS OF CIRCULATION																																																			
LATITUDE: 37.36770408		LONGITUDE: -78.85292878		STRUCTURE:		SURFACE ELEVATION: 788		BOTTOM OF CASING																																																			
<table><tr><td rowspan="2">DEPTH (FT)</td><td rowspan="2">SAMPLE NUMBER</td><td rowspan="2">SAMPLE TYPE</td><td rowspan="2">SAMPLE DISTANCE (IN)</td><td rowspan="2">SAMPLE RECOVERY (IN)</td><td rowspan="2">DESCRIPTION OF MATERIAL</td><td rowspan="2">STRATIGRAPHY</td><td rowspan="2">WATER LEVELS</td><td rowspan="2">ELEVATION (FT)</td><td rowspan="2">BLOWS/6" (TCP/MC/SPT - N VALUE)*</td><td colspan="2">Recovery % ■ RQD % ■</td><td colspan="2">Fines% F MC% ●</td></tr><tr><td>TCP ▼</td><td>ModCal ■</td><td>SPT ⊗</td><td>PL ⊗</td><td>MC ●</td><td>LL ▼</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0 20 40 60 80 100</td><td>0 20 40 60 80 100</td><td>0 20 40 60 80 100</td><td>0 20 40 60 80 100</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0 10 20 30 40 50</td><td>0 20 40 60 80 100</td><td>0 20 40 60 80 100</td><td>0 20 40 60 80 100</td></tr></table>												DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery % ■ RQD % ■		Fines% F MC% ●		TCP ▼	ModCal ■	SPT ⊗	PL ⊗	MC ●	LL ▼											0 20 40 60 80 100	0 20 40 60 80 100	0 20 40 60 80 100	0 20 40 60 80 100											0 10 20 30 40 50	0 20 40 60 80 100	0 20 40 60 80 100	0 20 40 60 80 100
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery % ■ RQD % ■												Fines% F MC% ●																																					
										TCP ▼	ModCal ■	SPT ⊗	PL ⊗	MC ●	LL ▼																																												
										0 20 40 60 80 100	0 20 40 60 80 100	0 20 40 60 80 100	0 20 40 60 80 100																																														
										0 10 20 30 40 50	0 20 40 60 80 100	0 20 40 60 80 100	0 20 40 60 80 100																																														
5	SS-01	SS	18	12	Topsoil [Thickness=4"]. (CL - ML) Residuum, SANDY SILTY CLAY - trace gravel, reddish brown, contains roots, moist, soft to very stiff.			785	2-3-1 (4)	4		12.2	56.7																																														
	SS-02	SS	18	16					3-4-6 (10)	10		12 19																																															
	SS-03	SS	18	18					4-9-10 (19)	19																																																	
	10	SS-04	SS	18	18				3-4-6 (10)	10		26.8																																															
	15	SS-05	SS	18	18				(ML) SILT - trace sand, tannish gray to bluish gray, moist, medium dense to dense.	4-6-6 (12)	12																																																
20	SS-06	SS	18	14	As above but with trace mica.	5-5-6 (11)	11		16.9																																																		
25	SS-07	SS	18	15		6-10-10 (20)	20																																																				
	SS-08	SS	18	18		10-15-17 (32)	32																																																				
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL																																																											
WL (First Encountered): Dry				BORING STARTED: 07/31/2025				CAVE IN DEPTH: 19FT																																																			
WL (Completion): Dry				BORING COMPLETED: 07/31/2025				HAMMER TYPE: Automatic																																																			
WL (Seasonal High Water):				EQUIPMENT:		LOGGED BY:		DRILLING METHOD:																																																			
WL (Stabilized):				D-50 Turbo		LKJ		Hollow Stem Auger (0'-35')																																																			
GEOTECHNICAL BOREHOLE LOG																																																											

CLIENT: Kimley-Horn and Associates, Inc.					PROJECT NO.: 12:20540		BORING NO.: SWM-09		SHEET: 2 OF 2				
PROJECT NAME: Appomattox Business Center - Preliminary					DRILLER/CONTRACTOR: Connelly and Associates, Inc.								
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522									LOSS OF CIRCULATION				
LATITUDE: 37.36770408			LONGITUDE: -78.85292878		STRUCTURE:		SURFACE ELEVATION: 788		BOTTOM OF CASING				
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %  RQD %  Fines%  MC% 			
					As above but with trace mica. (continued)					TCP  ModCal  SPT  PL  MC  LL 			
	SS-09	SS	18	15	(ML) SANDY SILT - trace gravel, grayish brown, contains mica, moist, medium dense.			755	6-12-14 (26)	QP 			
					END OF BORING AT 35 Ft								
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL													
 WL (First Encountered):					Dry		BORING STARTED:			07/31/2025		CAVE IN DEPTH: 19FT	
 WL (Completion):					Dry		BORING COMPLETED:			07/31/2025		HAMMER TYPE: Automatic	
 WL (Seasonal High Water):							EQUIPMENT:		LOGGED BY:		DRILLING METHOD:		
 WL (Stabilized):							D-50 Turbo		LKJ		Hollow Stem Auger (0'-35')		
GEOTECHNICAL BOREHOLE LOG													



CLIENT: Kimley-Horn and Associates, Inc.					PROJECT NO.: 12:20540		BORING NO.: SWM-10		SHEET: 2 OF 2				
PROJECT NAME: Appomattox Business Center - Preliminary					DRILLER/CONTRACTOR: Connelly and Associates, Inc.								
SITE LOCATION: Industrial Park Lane, Appomattox, Virginia, 24522									LOSS OF CIRCULATION				
LATITUDE: 37.36704603			LONGITUDE: -78.85267338		STRUCTURE:		SURFACE ELEVATION: 764		BOTTOM OF CASING				
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE (IN)	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	WATER LEVELS	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT - N VALUE)*	Recovery %  RQD % 		Fines%  MC% 	
										TCP  ModCal  SPT 		PL  MC  LL 	
					(ML) SILT - trace sand, brown with black veins, contains mica, medium dense. (continued)								
	SS-10	SS	5	5	(WR) WEATHERED ROCK sampled as SILT - trace sand, brown and black, contains mica, very dense.			730.0	50/5" (50+)				
					END OF BORING AT 35 Ft								
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL													
 WL (First Encountered):					18 FT		BORING STARTED:			07/31/2025		CAVE IN DEPTH: 24FT	
 WL (Completion):					Dry		BORING COMPLETED:			07/31/2025		HAMMER TYPE: Automatic	
 WL (Seasonal High Water):							EQUIPMENT:		LOGGED BY:		DRILLING METHOD:		
 WL (Stabilized):							D-50 Turbo		LKJ		Hollow Stem Auger (0'-35')		
GEOTECHNICAL BOREHOLE LOG													

APPENDIX C – Laboratory Testing

Laboratory Test Results Summary

Plasticity Charts

Grain Size Analyses

Direct Shear Test Results

One-Dimension Consolidation Test Results

Laboratory Testing Summary

Sample Location	Sample Number	Depth (ft)	^MC (%)	Soil Type	Atterberg Limits			**Percent Passing No. 200 Sieve	Moisture - Density		CBR (%)		#Organic Content (%)
					LL	PL	PI		<Maximum Density (pcf)	<Optimum Moisture (%)	0.1 in.	0.2 in.	
B-01	SS-02	3.5-5.0	34.2										
B-01	SS-04	8.5-10.0	42.0										
B-02	SS-02	3.5-5.0	23.2	CH	50	25	25	82.8					
B-02	SS-04	8.5-10.0	48.6										
B-02	SS-06	18.5-20.0	35.4										
SS-01	SS-02	3.5-5.0	37.3	MH	70	36	34	86.0					
SS-02	SS-04	8.5-10.0	30.5	ML	45	34	11	86.8					
SS-02	SS-07	23.5-25.0	54.2										
SS-02	SS-08	28.5-30.0	36.9										
SWM-01	SS-01	1.0-2.5	16.1										

Notes: See test reports for test method, ^ASTM D2216-19, *ASTM D2488, **ASTM D1140-17, #ASTM D2974-20e1 < See test report for D4718 corrected values

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content

Project: Appomattox Business Center - Preliminary
Client: Kimley-Horn and Associates, Inc.

Project No.: 12:20540
Date Reported: 8/20/2025



Office / Lab
ECS Mid-Atlantic LLC - Roanoke

Address
7670 Enon Drive
Suite 101
Roanoke, VA 24019

Office Number / Fax
(540)362-2000
(540)362-1202

Tested by	Checked by	Approved by	Date Received
JHrysenko	JMurphy	JMurphy	8/6/2025

Laboratory Testing Summary

Sample Location	Sample Number	Depth (ft)	^MC (%)	Soil Type	Atterberg Limits			**Percent Passing No. 200 Sieve	Moisture - Density		CBR (%)		#Organic Content (%)
					LL	PL	PI		<Maximum Density (pcf)	<Optimum Moisture (%)	0.1 in.	0.2 in.	
SWM-01	SS-02	3.5-5.0	20.1	CL	38	21	17	65.7					
SWM-01	SS-04	8.5-10.0	18.1										
SWM-02	SS-04	8.5-10.0	26.4										
SWM-02	SS-05	13.5-15.0	38.4	MH	64	32	32	83.5					
SWM-02A	SS-01	11.0-12.5	51.8										
SWM-03	SS-02	3.5-5.0	12.6										
SWM-03	SS-04	8.5-10.0	9.9										
SWM-03	SS-08	28.5-30.0	45.3	ML	NP	NP	NP	63.6					
SWM-04	SS-02	3.5-5.0	20.2										
SWM-04	SS-04	8.5-10.0	27.4	CH	54	29	25	65.9					

Notes: See test reports for test method, ^ASTM D2216-19, *ASTM D2488, **ASTM D1140-17, #ASTM D2974-20e1 < See test report for D4718 corrected values

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content

Project: Appomattox Business Center - Preliminary
Client: Kimley-Horn and Associates, Inc.

Project No.: 12:20540
Date Reported: 8/20/2025



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7670 Enon Drive
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Roanoke, VA 24019

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(540)362-2000
(540)362-1202

Tested by	Checked by	Approved by	Date Received
JHrysenko	JMurphy	JMurphy	8/6/2025

Laboratory Testing Summary

Sample Location	Sample Number	Depth (ft)	^MC (%)	Soil Type	Atterberg Limits			**Percent Passing No. 200 Sieve	Moisture - Density		CBR (%)		#Organic Content (%)
					LL	PL	PI		<Maximum Density (pcf)	<Optimum Moisture (%)	0.1 in.	0.2 in.	
SWM-04	SS-06	18.5-20.0	18.5										
SWM-05	SS-04	8.5-10.0	48.6	MH	75	49	26	97.4					
SWM-05	SS-05	13.5-15.0	61.0										
SWM-05	SS-07	23.5-25.0	68.1										
SWM-06	SS-02	3.5-5.0	24.4										
SWM-06	SS-04	8.5-10.0	46.4										
SWM-06	SS-05	13.5-15.0	32.0	ML	NP	NP	NP	51.8					
SWM-07	SS-05	13.5-15.0	37.4										
SWM-07	SS-06	18.5-20.0	53.1	ML	NP	NP	NP	66.5					
SWM-07	SS-07	23.5-25.0	42.1										

Notes: See test reports for test method, ^ASTM D2216-19, *ASTM D2488, **ASTM D1140-17, #ASTM D2974-20e1 < See test report for D4718 corrected values

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content

Project: Appomattox Business Center - Preliminary
Client: Kimley-Horn and Associates, Inc.

Project No.: 12:20540
Date Reported: 8/20/2025



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ECS Mid-Atlantic LLC - Roanoke

Address
7670 Enon Drive
Suite 101
Roanoke, VA 24019

Office Number / Fax
(540)362-2000
(540)362-1202

Tested by	Checked by	Approved by	Date Received
JHrysenko	JMurphy	JMurphy	8/6/2025

Laboratory Testing Summary

Sample Location	Sample Number	Depth (ft)	^MC (%)	Soil Type	Atterberg Limits			**Percent Passing No. 200 Sieve	Moisture - Density		CBR (%)		#Organic Content (%)
					LL	PL	PI		<Maximum Density (pcf)	<Optimum Moisture (%)	0.1 in.	0.2 in.	
SWM-08	SS-02	3.5-5.0	31.6	CH	64	24	40	89.4					
SWM-08	SS-03	6.0-7.5	10.4										
SWM-08	SS-05	13.5-15.0	18.5										
SWM-09	SS-01	1.0-2.5	12.2	CL-ML	19	12	7	56.7					
SWM-09	SS-04	8.5-10.0	26.8										
SWM-09	SS-06	18.5-20.0	16.9										
SWM-10	SS-02	3.5-5.0	31.1										
SWM-10	SS-05	13.5-15.0	40.6										
SWM-10	SS-06	17.0-18.5	26.4										

Notes: See test reports for test method, ^ASTM D2216-19, *ASTM D2488, **ASTM D1140-17, #ASTM D2974-20e1 < See test report for D4718 corrected values

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content

Project: Appomattox Business Center - Preliminary
Client: Kimley-Horn and Associates, Inc.

Project No.: 12:20540
Date Reported: 8/20/2025



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Address

Office Number / Fax

ECS Mid-Atlantic LLC - Roanoke

7670 Enon Drive
Suite 101
Roanoke, VA 24019

(540)362-2000
(540)362-1202

Tested by	Checked by	Approved by	Date Received
JHrysenko	JMurphy	JMurphy	8/6/2025

Laboratory Testing Summary

Sample Location	Sample Number	Depth (ft)	^MC (%)	Soil Type	Atterberg Limits			**Percent Passing No. 200 Sieve	Moisture - Density		CBR (%)		#Organic Content (%)
					LL	PL	PI		<Maximum Density (pcf)	<Optimum Moisture (%)	0.1 in.	0.2 in.	
B-01A	ST-01	6.0-8.0	36.5	MH	51	33	18	82.9					
SS-01	ST-01	15.0-16.0	28.7	ML	NP	NP	NP	61.2					
SWM-02A	ST-01	13.0-15.0	40.4	MH	64	37	27	71.4					
SWM-10	ST-01	15.0-17.0	54.3	ML	36	26	10	62.1					

Notes: See test reports for test method, ^ASTM D2216-19, *ASTM D2488, **ASTM D1140-17, #ASTM D2974-20e1 < See test report for D4718 corrected values

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content

Project: Appomattox Business Center - Preliminary
Client: Kimley-Horn and Associates, Inc.

Project No.: 12:20540
Date Reported: 8/19/2025



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Address

Office Number / Fax

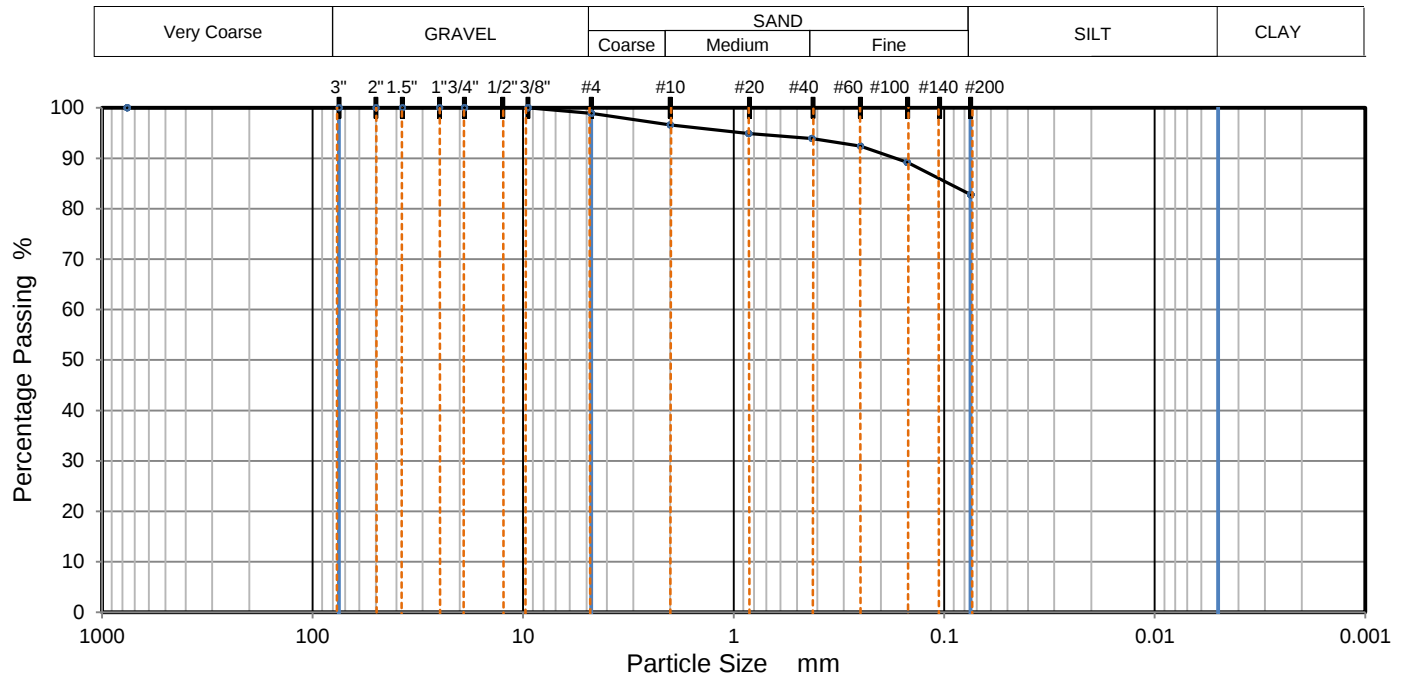
ECS Mid-Atlantic LLC - Chantilly

14026 Thunderbolt Place Suite
100 Chantilly, VA 20151-3232

(703)471-8400
(703)834-5527

Tested by	Checked by	Approved by	Date Received
jvong	MUzun	MUzun	8/8/2025

PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD A)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100		
2"	100		
1 1/2"	100		
1"	100		
3/4"	100		
3/8"	100		
#4	99		
#10	97		
#20	95		
#40	94		
#60	92		
#100	89		
#200	83		

Dry Mass of sample, g

37.5

Sample Proportions	% dry mass
Very coarse, >3" sieve	0
Gravel, 3" to # 4 sieve	1
Coarse Sand, #4 to #10 sieve	2
Medium Sand, #10 to #40	3
Fine Sand, #40 to #200	11
Fines <#200	83

USCS	CH	Liquid Limit	50	D90	0.170	D50		D10	
AASHTO	A-7-6	Plastic Limit	25	D85	0.095	D30		Cu	
USCS Group Name	Fat clay with sand	Plasticity Index	25	D60		D15		Cc	

Project: Appomattox Business Center - Preliminary

Client: Kimley-Horn and Associates, Inc.

Sample Description: Red FAT CLAY with Sand

Sample Source: B-02

Project No.: 12:20540

Depth (ft): 3.5 - 5.0

Sample No.: SS-02

Date Reported: 8/20/2025



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ECS Mid-Atlantic LLC - Roanoke

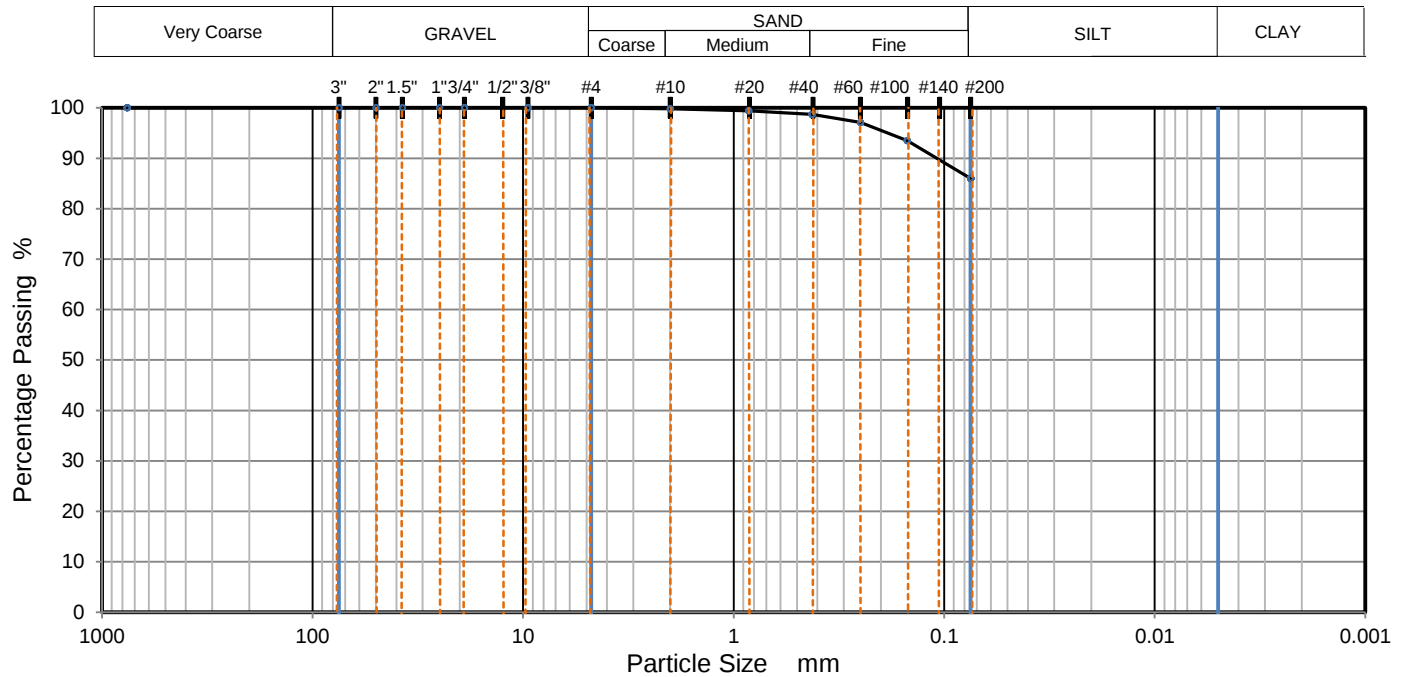
7670 Enon Drive
Suite 101
Roanoke, VA 24019

(540)362-2000

(540)362-1202

Tested by	Checked by	Approved by	Date Received	Remarks
JHrysenko	JMurphy	JMurphy	8/6/2025	

PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD A)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100		
2"	100		
1 1/2"	100		
1"	100		
3/4"	100		
3/8"	100		
#4	100		
#10	100		
#20	99		
#40	99		
#60	97		
#100	94		
#200	86		

Dry Mass of sample, g

20.9

Sample Proportions	% dry mass
Very coarse, >3" sieve	0
Gravel, 3" to # 4 sieve	0
Coarse Sand, #4 to #10 sieve	0
Medium Sand, #10 to #40	1
Fine Sand, #40 to #200	13
Fines <#200	86

USCS	MH	Liquid Limit	70	D90	0.109	D50		D10	
AASHTO	A-7-5	Plastic Limit	36	D85		D30		Cu	
USCS Group Name	Elastic silt	Plasticity Index	34	D60		D15		Cc	

Project: Appomattox Business Center - Preliminary

Client: Kimley-Horn and Associates, Inc.

Sample Description: Red ELASTIC SILT

Sample Source: SS-01

Project No.: 12:20540

Depth (ft): 3.5 - 5.0

Sample No.: SS-02

Date Reported: 8/20/2025



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Address

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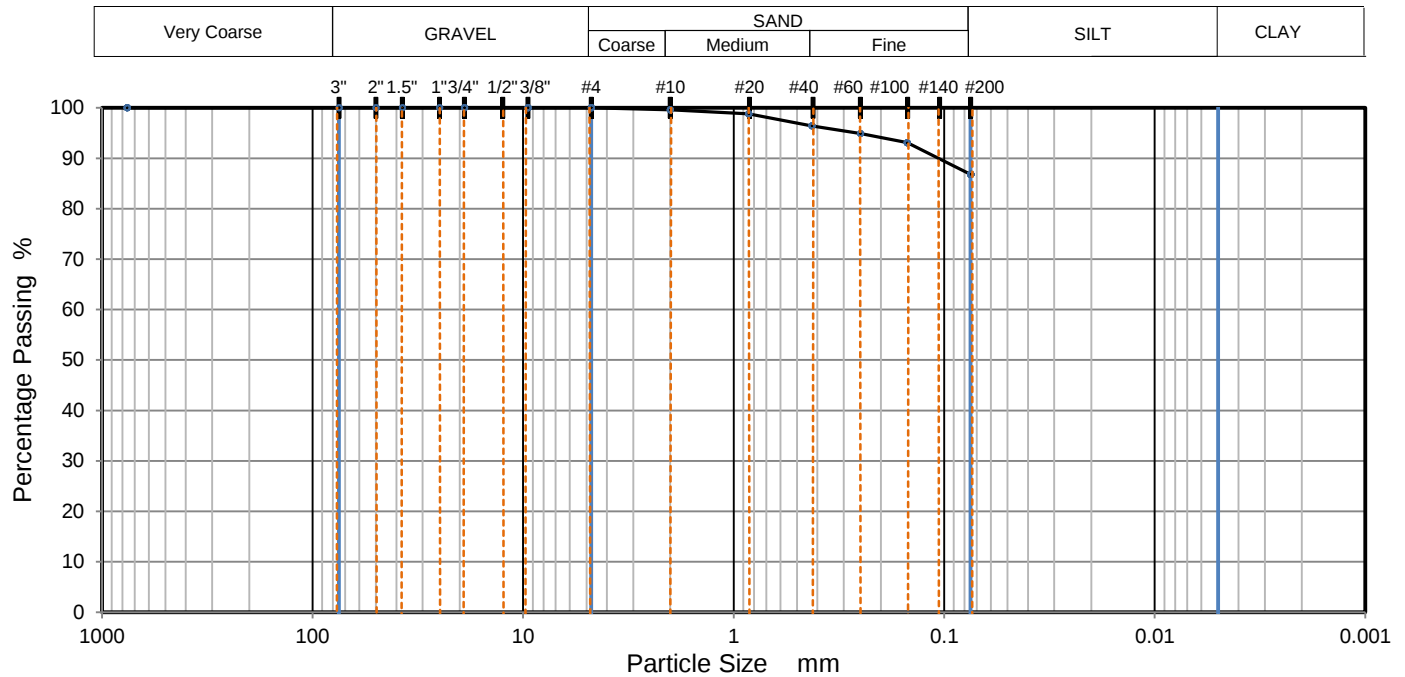
7670 Enon Drive
Suite 101
Roanoke, VA 24019

(540)362-2000

(540)362-1202

Tested by	Checked by	Approved by	Date Received	Remarks
JHrysenko	JMurphy	JMurphy	8/6/2025	

PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD A)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100		
2"	100		
1 1/2"	100		
1"	100		
3/4"	100		
3/8"	100		
#4	100		
#10	100		
#20	99		
#40	96		
#60	95		
#100	93		
#200	87		

Dry Mass of sample, g

34.0

Sample Proportions	% dry mass
Very coarse, >3" sieve	0
Gravel, 3" to # 4 sieve	0
Coarse Sand, #4 to #10 sieve	0
Medium Sand, #10 to #40	4
Fine Sand, #40 to #200	9
Fines <#200	87

USCS	ML	Liquid Limit	45	D90	0.107	D50		D10	
AASHTO	A-7-5	Plastic Limit	34	D85		D30		Cu	
USCS Group Name	Silt	Plasticity Index	11	D60		D15		Cc	

Project: Appomattox Business Center - Preliminary

Client: Kimley-Horn and Associates, Inc.

Sample Description: Orange Brown SILT

Sample Source: SS-02

Project No.: 12:20540

Depth (ft): 8.5 - 10.0

Sample No.: SS-04

Date Reported: 8/20/2025



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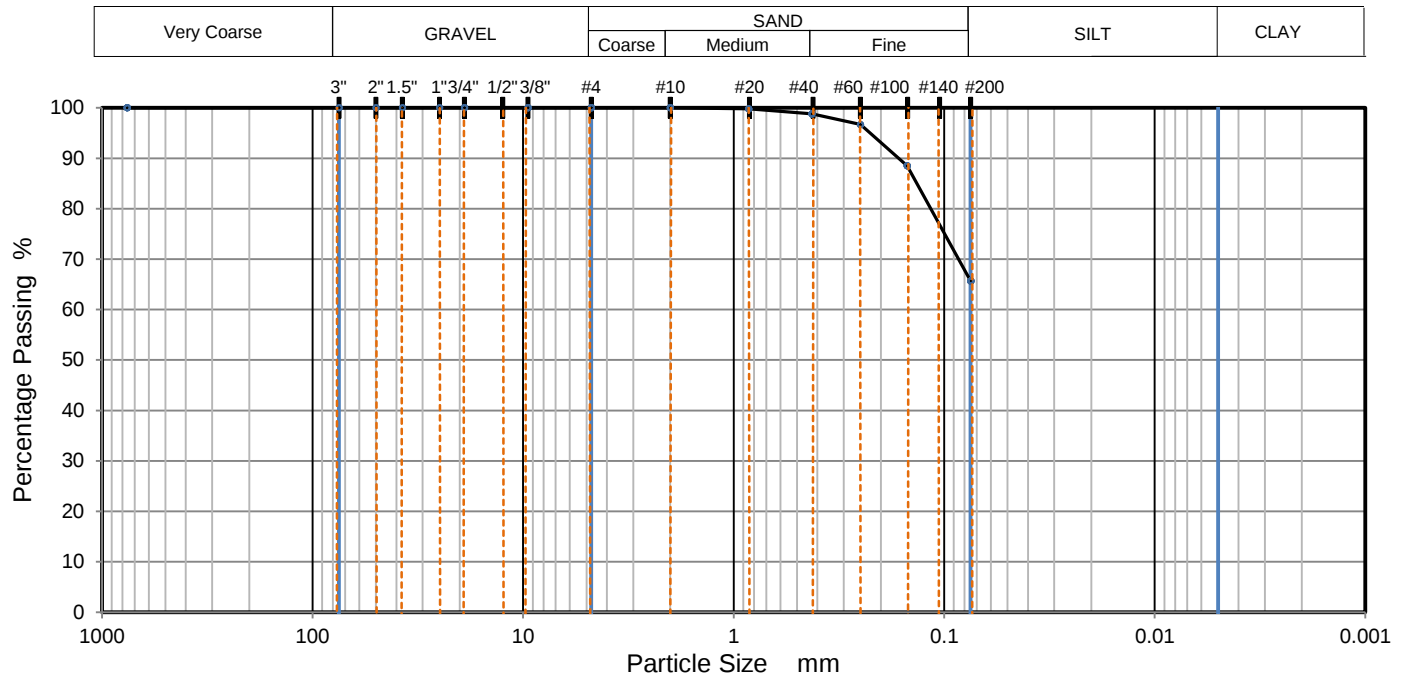
7670 Enon Drive
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JHrysenko	JMurphy	JMurphy	8/6/2025	

PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD A)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100		
2"	100		
1 1/2"	100		
1"	100		
3/4"	100		
3/8"	100		
#4	100		
#10	100		
#20	100		
#40	99		
#60	97		
#100	89		
#200	66		

Dry Mass of sample, g

33.6

Sample Proportions	% dry mass
Very coarse, >3" sieve	0
Gravel, 3" to # 4 sieve	0
Coarse Sand, #4 to #10 sieve	0
Medium Sand, #10 to #40	1
Fine Sand, #40 to #200	33
Fines <#200	66

USCS	CL	Liquid Limit	38	D90	0.165	D50		D10	
AASHTO	A-6	Plastic Limit	21	D85	0.135	D30		Cu	
USCS Group Name	Sandy lean clay	Plasticity Index	17	D60		D15		Cc	

Project: Appomattox Business Center - Preliminary

Client: Kimley-Horn and Associates, Inc.

Sample Description: Red SANDY LEAN CLAY

Sample Source: SWM-01

Project No.: 12:20540

Depth (ft): 3.5 - 5.0

Sample No.: SS-02

Date Reported: 8/20/2025



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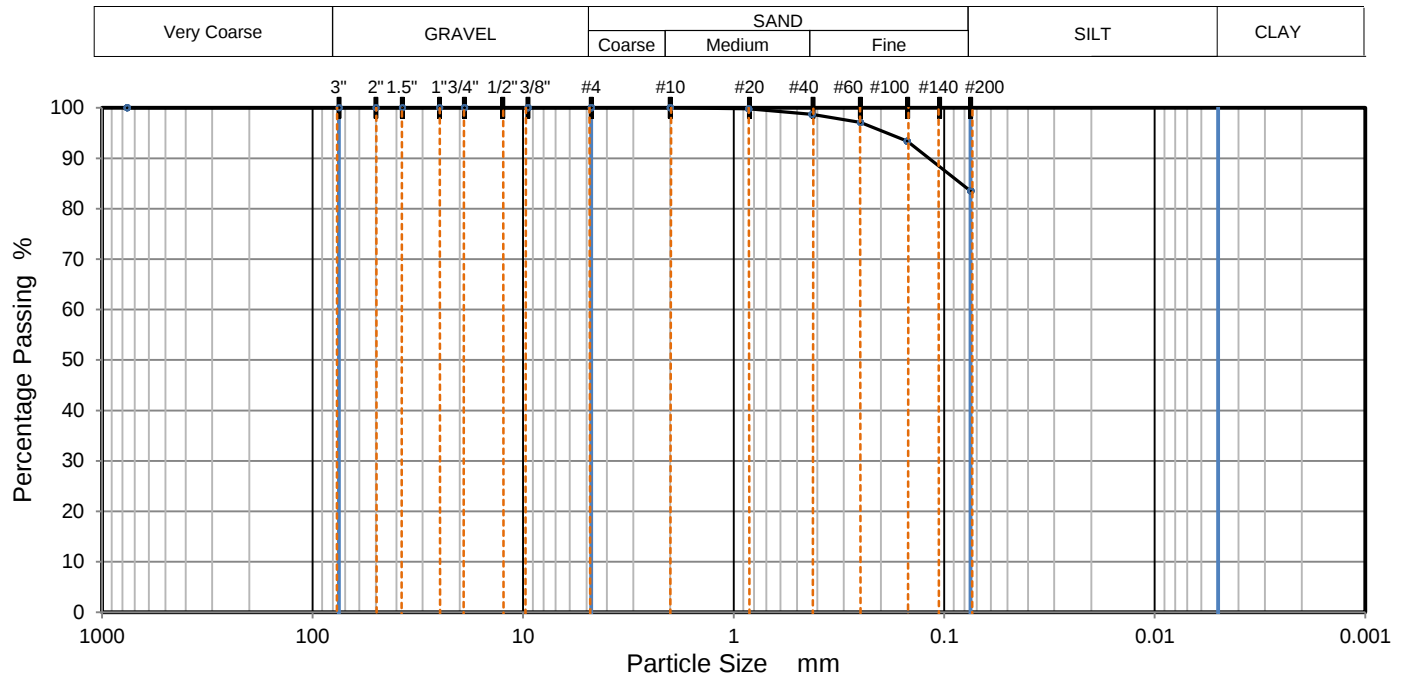
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PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD A)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100		
2"	100		
1 1/2"	100		
1"	100		
3/4"	100		
3/8"	100		
#4	100		
#10	100		
#20	100		
#40	99		
#60	97		
#100	93		
#200	84		

Dry Mass of sample, g

28.9

Sample Proportions	% dry mass
Very coarse, >3" sieve	0
Gravel, 3" to # 4 sieve	0
Coarse Sand, #4 to #10 sieve	0
Medium Sand, #10 to #40	1
Fine Sand, #40 to #200	15
Fines <#200	84

USCS	MH	Liquid Limit	64	D90	0.118	D50		D10	
AASHTO	A-7-5	Plastic Limit	32	D85	0.083	D30		Cu	
USCS Group Name	Elastic silt with sand	Plasticity Index	32	D60		D15		Cc	

Project: Appomattox Business Center - Preliminary

Client: Kimley-Horn and Associates, Inc.

Sample Description: Red Brown ELASTIC SILT with Sand

Sample Source: SWM-02

Project No.: 12:20540

Depth (ft): 13.5 - 15.0

Sample No.: SS-05

Date Reported: 8/20/2025



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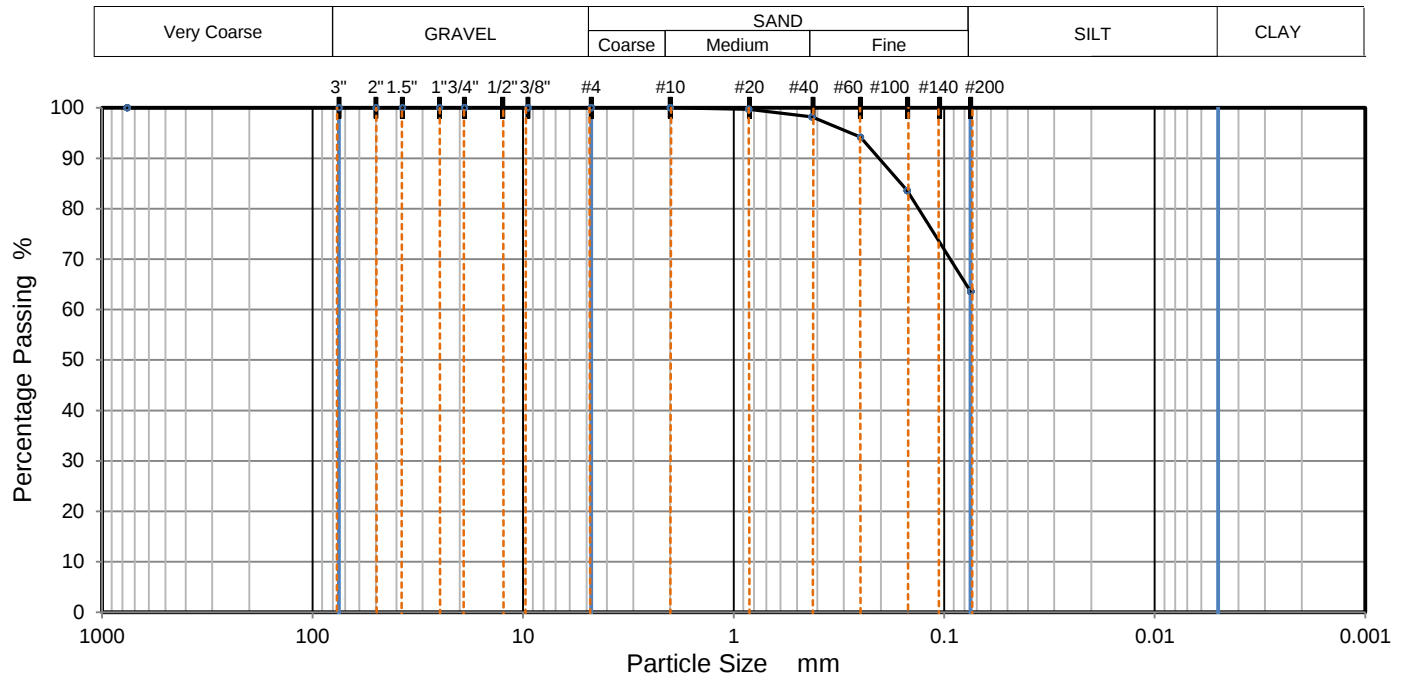
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PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD A)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100		
2"	100		
1 1/2"	100		
1"	100		
3/4"	100		
3/8"	100		
#4	100		
#10	100		
#20	100		
#40	98		
#60	94		
#100	84		
#200	64		

Dry Mass of sample, g

62.9

Sample Proportions	% dry mass
Very coarse, >3" sieve	0
Gravel, 3" to # 4 sieve	0
Coarse Sand, #4 to #10 sieve	0
Medium Sand, #10 to #40	2
Fine Sand, #40 to #200	34
Fines <#200	64

USCS	ML	Liquid Limit	NP	D90	0.204	D50		D10	
AASHTO	A-4	Plastic Limit	NP	D85	0.161	D30		Cu	
USCS Group Name	Sandy silt	Plasticity Index	NP	D60		D15		Cc	

Project: Appomattox Business Center - Preliminary

Client: Kimley-Horn and Associates, Inc.

Sample Description: Grey SANDY SILT with Mica

Sample Source: SWM-03

Project No.: 12:20540

Depth (ft): 28.5 - 30.0

Sample No.: SS-08

Date Reported: 8/20/2025



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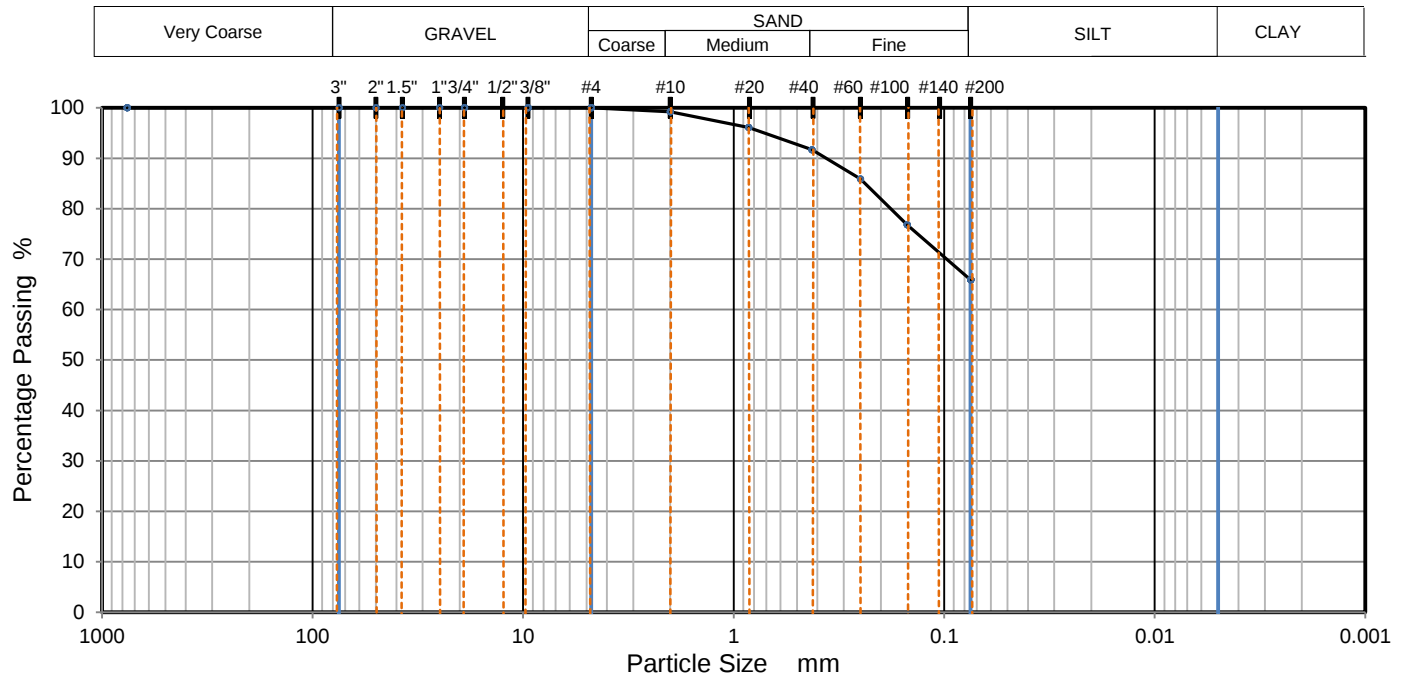
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PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD A)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100		
2"	100		
1 1/2"	100		
1"	100		
3/4"	100		
3/8"	100		
#4	100		
#10	99		
#20	96		
#40	92		
#60	86		
#100	77		
#200	66		

Dry Mass of sample, g

39.6

Sample Proportions	% dry mass
Very coarse, >3" sieve	0
Gravel, 3" to # 4 sieve	0
Coarse Sand, #4 to #10 sieve	1
Medium Sand, #10 to #40	7
Fine Sand, #40 to #200	26
Fines <#200	66

USCS	CH	Liquid Limit	54	D90	0.364	D50		D10	
AASHTO	A-7-6	Plastic Limit	29	D85	0.238	D30		Cu	
USCS Group Name	Sandy fat clay	Plasticity Index	25	D60		D15		Cc	

Project: Appomattox Business Center - Preliminary

Client: Kimley-Horn and Associates, Inc.

Sample Description: Orange SANDY FAT CLAY

Sample Source: SWM-04

Project No.: 12:20540

Depth (ft): 8.5 - 10.0

Sample No.: SS-04

Date Reported: 8/20/2025



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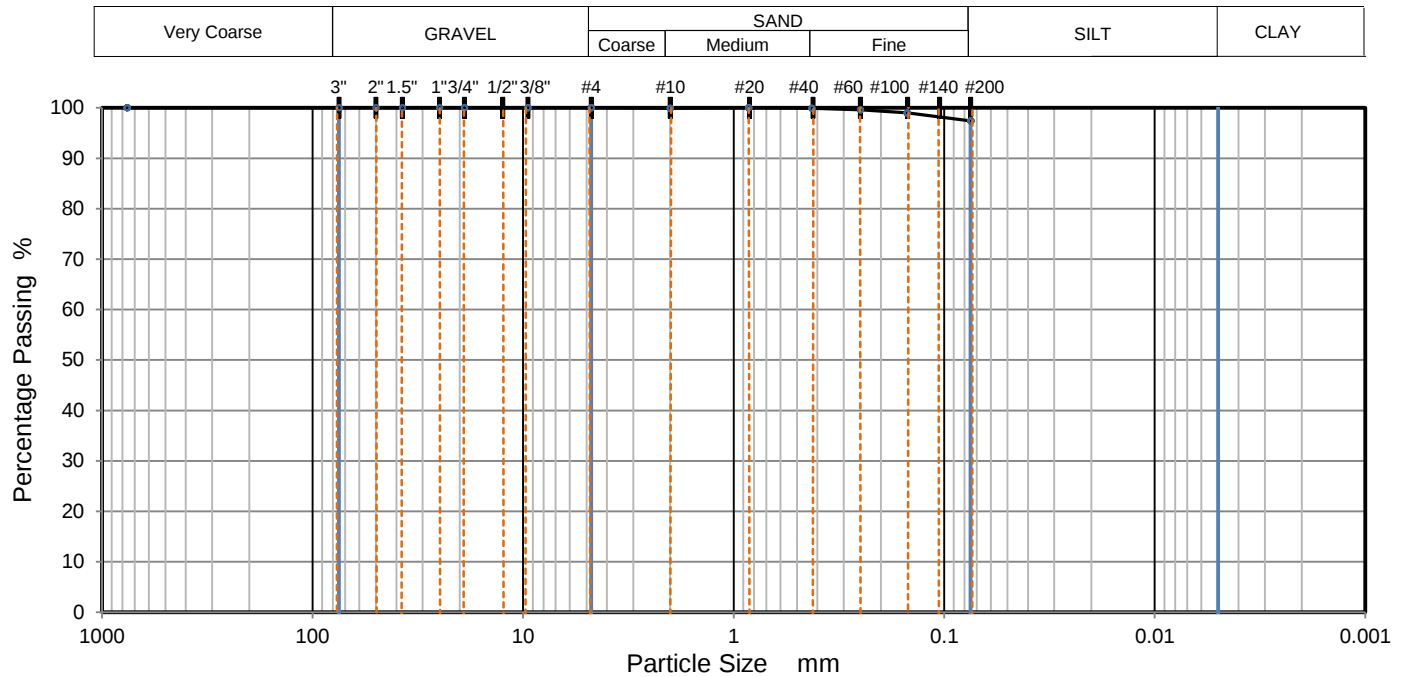
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PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD A)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100		
2"	100		
1 1/2"	100		
1"	100		
3/4"	100		
3/8"	100		
#4	100		
#10	100		
#20	100		
#40	100		
#60	100		
#100	99		
#200	97		

Dry Mass of sample, g

30.6

Sample Proportions	% dry mass
Very coarse, >3" sieve	0
Gravel, 3" to # 4 sieve	0
Coarse Sand, #4 to #10 sieve	0
Medium Sand, #10 to #40	0
Fine Sand, #40 to #200	3
Fines <#200	97

USCS	MH	Liquid Limit	75	D90		D50		D10	
AASHTO	A-7-5	Plastic Limit	49	D85		D30		Cu	
USCS Group Name	Elastic silt	Plasticity Index	26	D60		D15		Cc	

Project: Appomattox Business Center - Preliminary

Client: Kimley-Horn and Associates, Inc.

Sample Description: Red ELASTIC SILT

Sample Source: SWM-05

Project No.: 12:20540

Depth (ft): 8.5 - 10.0

Sample No.: SS-04

Date Reported: 8/20/2025



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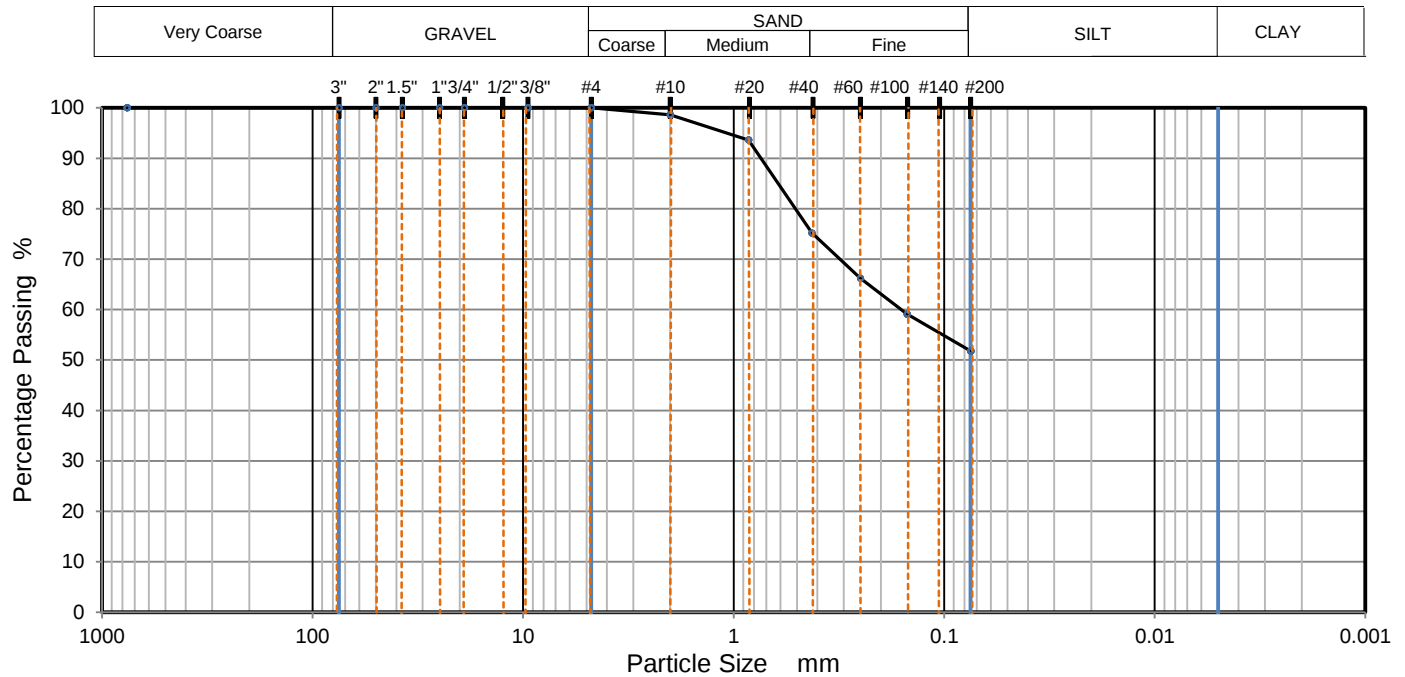
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PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD A)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100		
2"	100		
1 1/2"	100		
1"	100		
3/4"	100		
3/8"	100		
#4	100		
#10	99		
#20	94		
#40	75		
#60	66		
#100	59		
#200	52		

Dry Mass of sample, g

34.8

Sample Proportions	% dry mass
Very coarse, >3" sieve	0
Gravel, 3" to # 4 sieve	0
Coarse Sand, #4 to #10 sieve	1
Medium Sand, #10 to #40	24
Fine Sand, #40 to #200	23
Fines <#200	52

USCS	ML	Liquid Limit	NP	D90	0.742	D50		D10	
AASHTO	A-4	Plastic Limit	NP	D85	0.615	D30		Cu	
USCS Group Name	Sandy silt	Plasticity Index	NP	D60	0.160	D15		Cc	

Project: Appomattox Business Center - Preliminary

Client: Kimley-Horn and Associates, Inc.

Sample Description: Orange SANDY SILT

Sample Source: SWM-06

Project No.: 12:20540

Depth (ft): 13.5 - 15.0

Sample No.: SS-05

Date Reported: 8/20/2025



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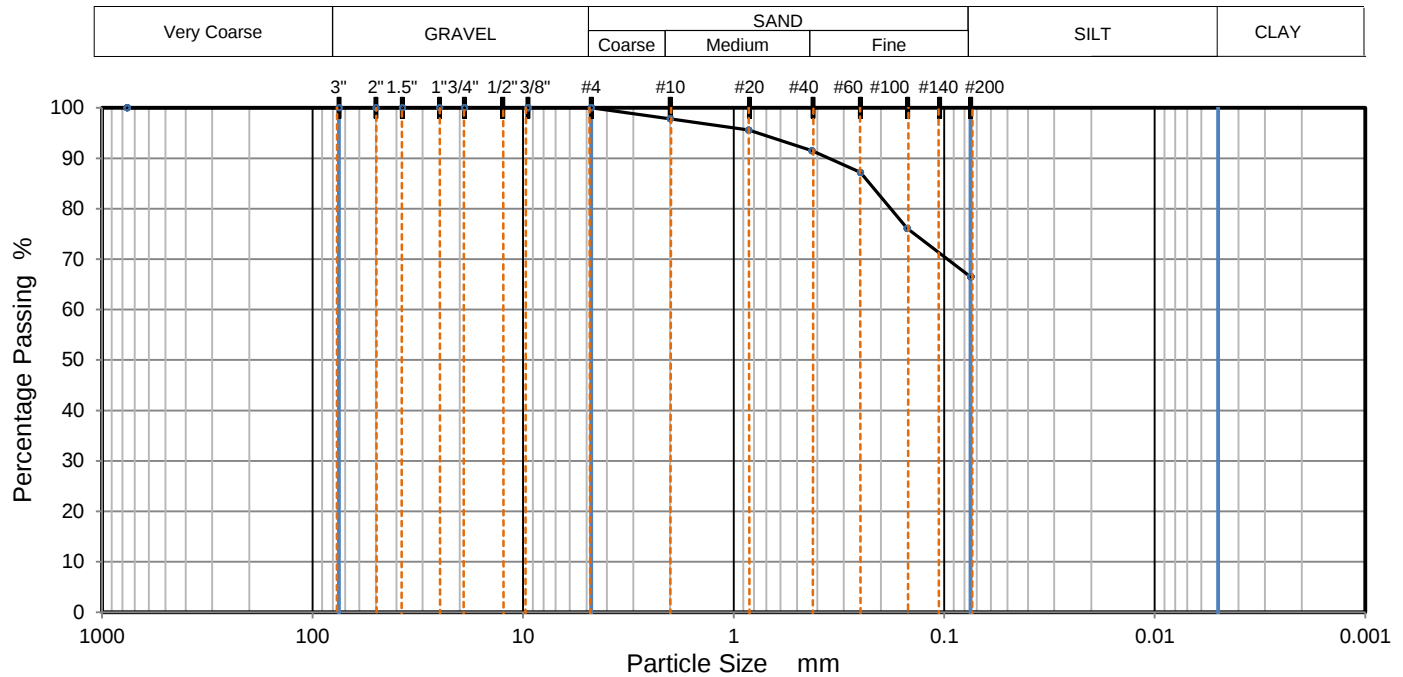
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PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD A)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100		
2"	100		
1 1/2"	100		
1"	100		
3/4"	100		
3/8"	100		
#4	100		
#10	98		
#20	96		
#40	92		
#60	87		
#100	76		
#200	67		

Dry Mass of sample, g

28.5

Sample Proportions	% dry mass
Very coarse, >3" sieve	0
Gravel, 3" to # 4 sieve	0
Coarse Sand, #4 to #10 sieve	2
Medium Sand, #10 to #40	6
Fine Sand, #40 to #200	25
Fines <#200	67

USCS	ML	Liquid Limit	NP	D90	0.353	D50		D10	
AASHTO	A-4	Plastic Limit	NP	D85	0.226	D30		Cu	
USCS Group Name	Sandy silt	Plasticity Index	NP	D60		D15		Cc	

Project: Appomattox Business Center - Preliminary

Client: Kimley-Horn and Associates, Inc.

Sample Description: Orange SANDY SILT

Sample Source: SWM-07

Project No.: 12:20540

Depth (ft): 18.5 - 20.0

Sample No.: SS-06

Date Reported: 8/20/2025



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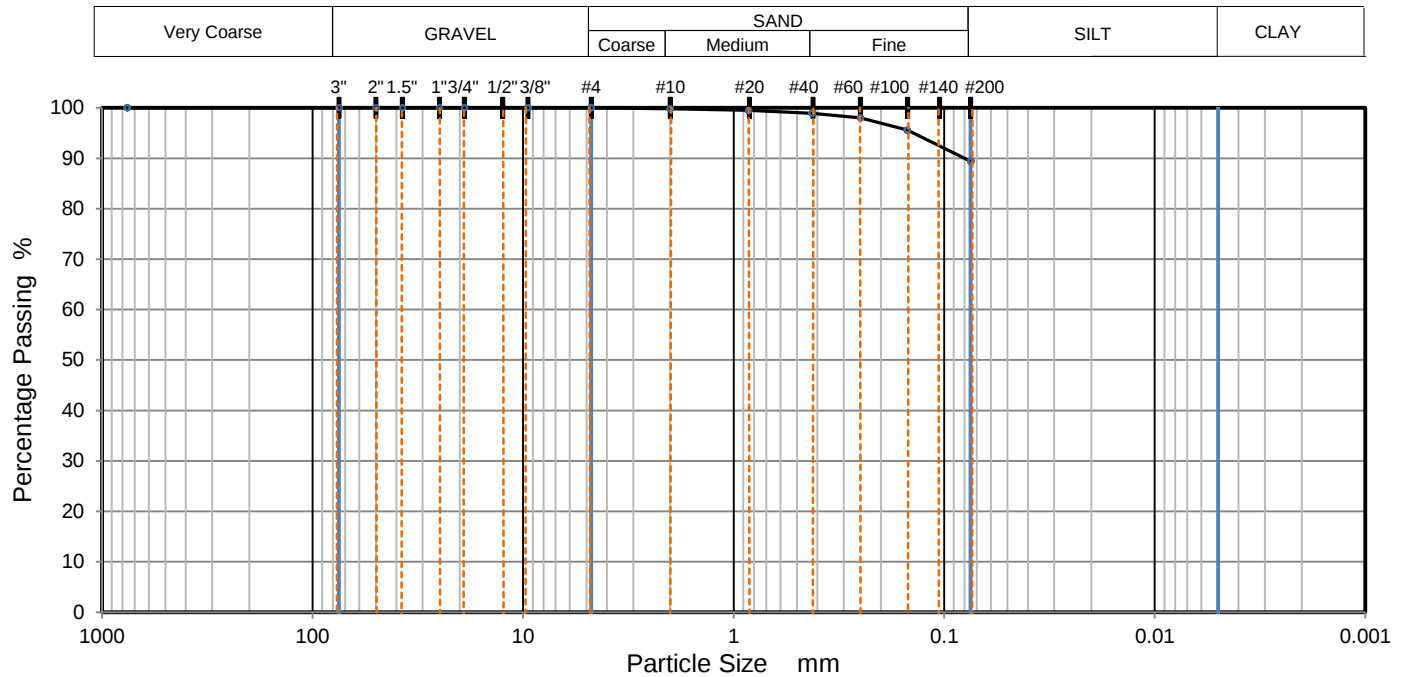
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PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD A)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100		
2"	100		
1 1/2"	100		
1"	100		
3/4"	100		
3/8"	100		
#4	100		
#10	100		
#20	100		
#40	99		
#60	98		
#100	96		
#200	89		

Dry Mass of sample, g

34.9

Sample Proportions	% dry mass
Very coarse, >3" sieve	0
Gravel, 3" to # 4 sieve	0
Coarse Sand, #4 to #10 sieve	0
Medium Sand, #10 to #40	1
Fine Sand, #40 to #200	10
Fines <#200	89

USCS	CH	Liquid Limit	64	D90	0.080	D50		D10	
AASHTO	A-7-6	Plastic Limit	24	D85		D30		Cu	
USCS Group Name	Fat clay	Plasticity Index	40	D60		D15		Cc	

Project: Appomattox Business Center - Preliminary

Client: Kimley-Horn and Associates, Inc.

Sample Description: Red FAT CLAY

Sample Source: SWM-08

Project No.: 12:20540

Depth (ft): 3.5 - 5.0

Sample No.: SS-02

Date Reported: 8/20/2025



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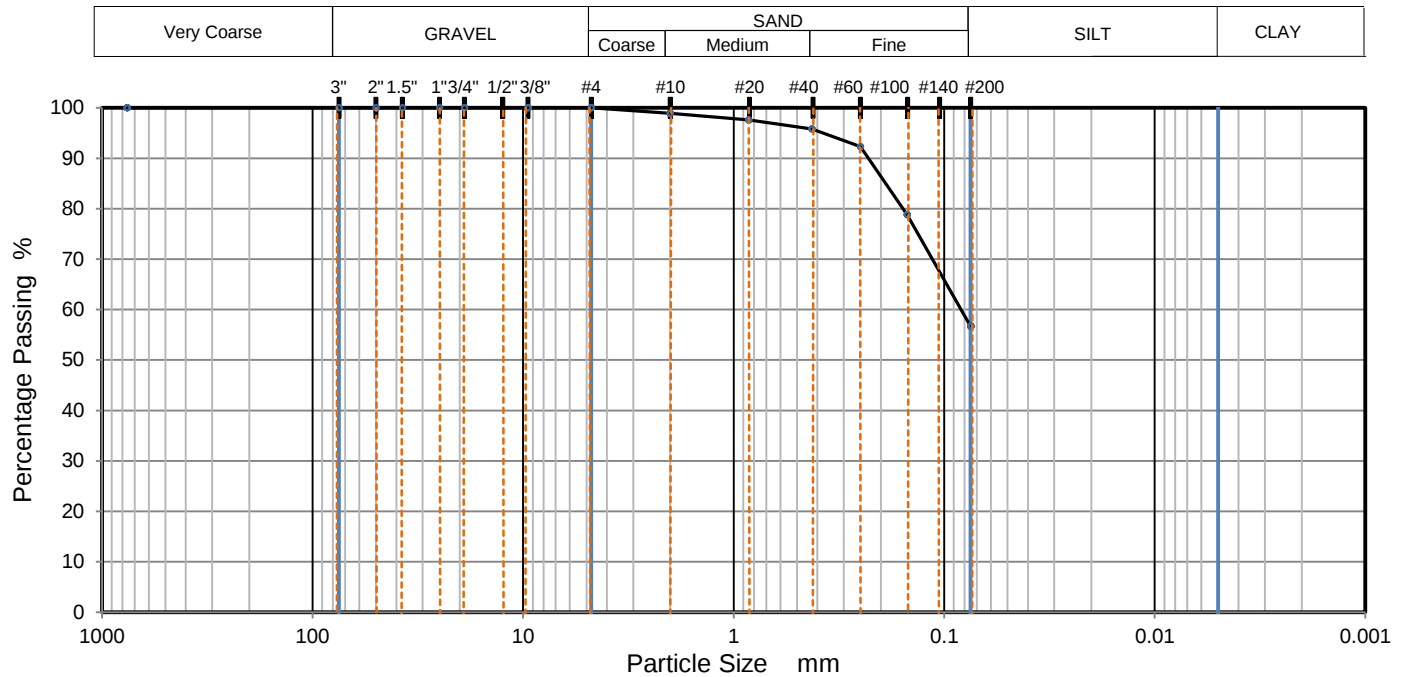
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PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD A)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100		
2"	100		
1 1/2"	100		
1"	100		
3/4"	100		
3/8"	100		
#4	100		
#10	99		
#20	98		
#40	96		
#60	92		
#100	79		
#200	57		

Dry Mass of sample, g

57.0

Sample Proportions	% dry mass
Very coarse, >3" sieve	0
Gravel, 3" to # 4 sieve	0
Coarse Sand, #4 to #10 sieve	1
Medium Sand, #10 to #40	3
Fine Sand, #40 to #200	39
Fines <#200	57

USCS	CL-ML	Liquid Limit	19	D90	0.229	D50		D10	
AASHTO	A-4	Plastic Limit	12	D85	0.190	D30		Cu	
USCS Group Name	Sandy silty clay	Plasticity Index	7	D60	0.083	D15		Cc	

Project: Appomattox Business Center - Preliminary

Client: Kimley-Horn and Associates, Inc.

Sample Description: Brown SANDY SILTY CLAY

Sample Source: SWM-09

Project No.: 12:20540

Depth (ft): 1.0 - 2.5

Sample No.: SS-01

Date Reported: 8/20/2025



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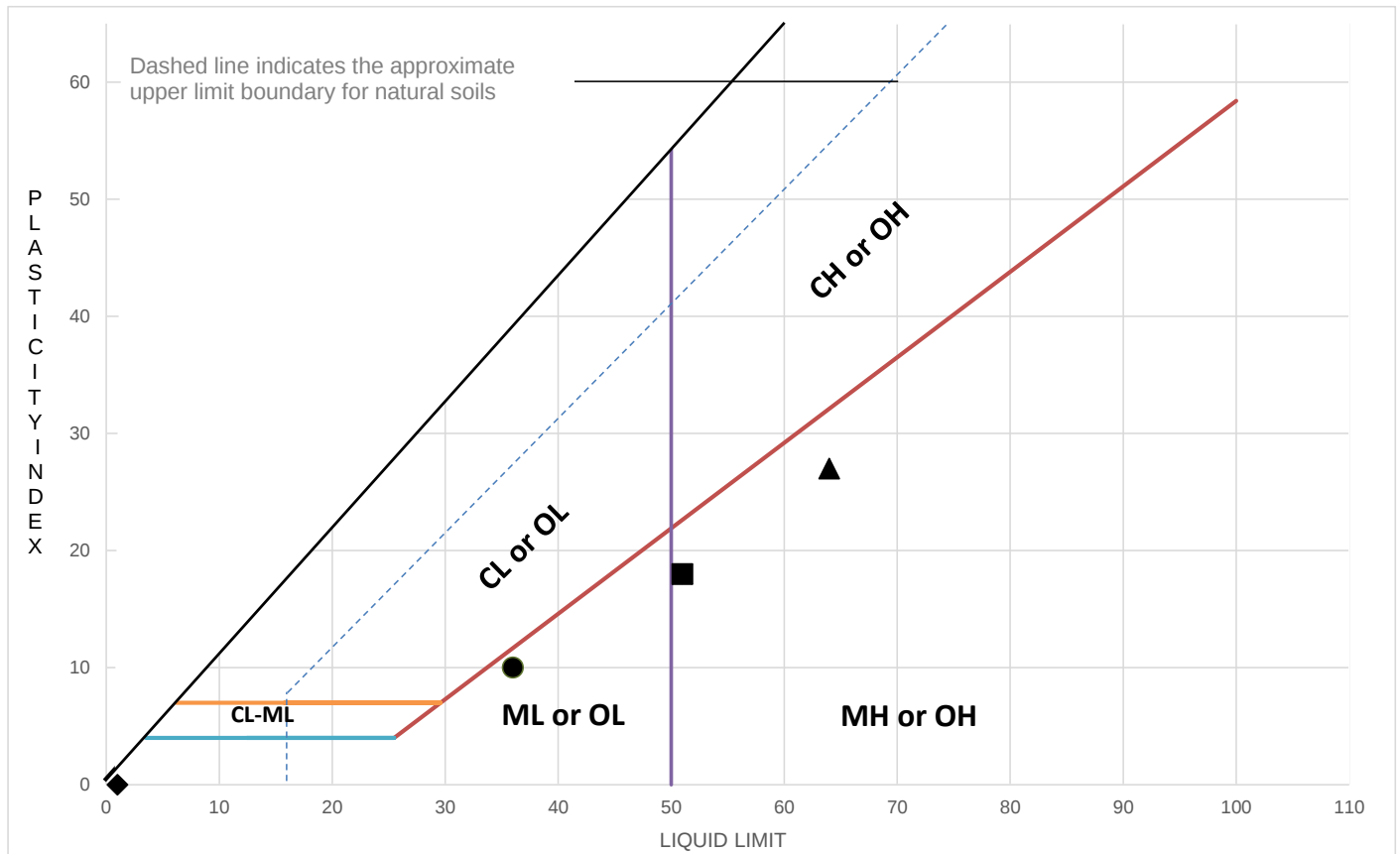
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LIQUID AND PLASTIC LIMITS TEST REPORT



TEST RESULTS (ASTM D4318-10 (MULTIPOINT TEST))

	Sample Location	Sample Number	Sample Depth (ft)	LL	PL	PI	%<#40	%<#200	AASHTO	USCS	Material Description
■	B-01A	ST-01	6.00-8.00	51	33	18	93.0	82.9	A-7-5	MH	Elastic Silt with Sand Yellowish Brown
◆	SS-01	ST-01	15.00-16.00	NP	NP	NP	95.2	61.2	A-4	ML	Sandy Silt Yellowish Brown
▲	SWM-02A	ST-01	13.00-15.00	64	37	27	87.5	71.4	A-7-5	MH	Elastic Silt with Sand Yellowish Brown
●	SWM-10	ST-01	15.00-17.00	36	26	10	88.5	62.1	A-4	ML	Sandy Silt Yellowish Brown

Project: Appomattox Business Center - Preliminary
Client: Kimley-Horn and Associates, Inc.

Project No.: 12:20540
Date Reported: 8/19/2025



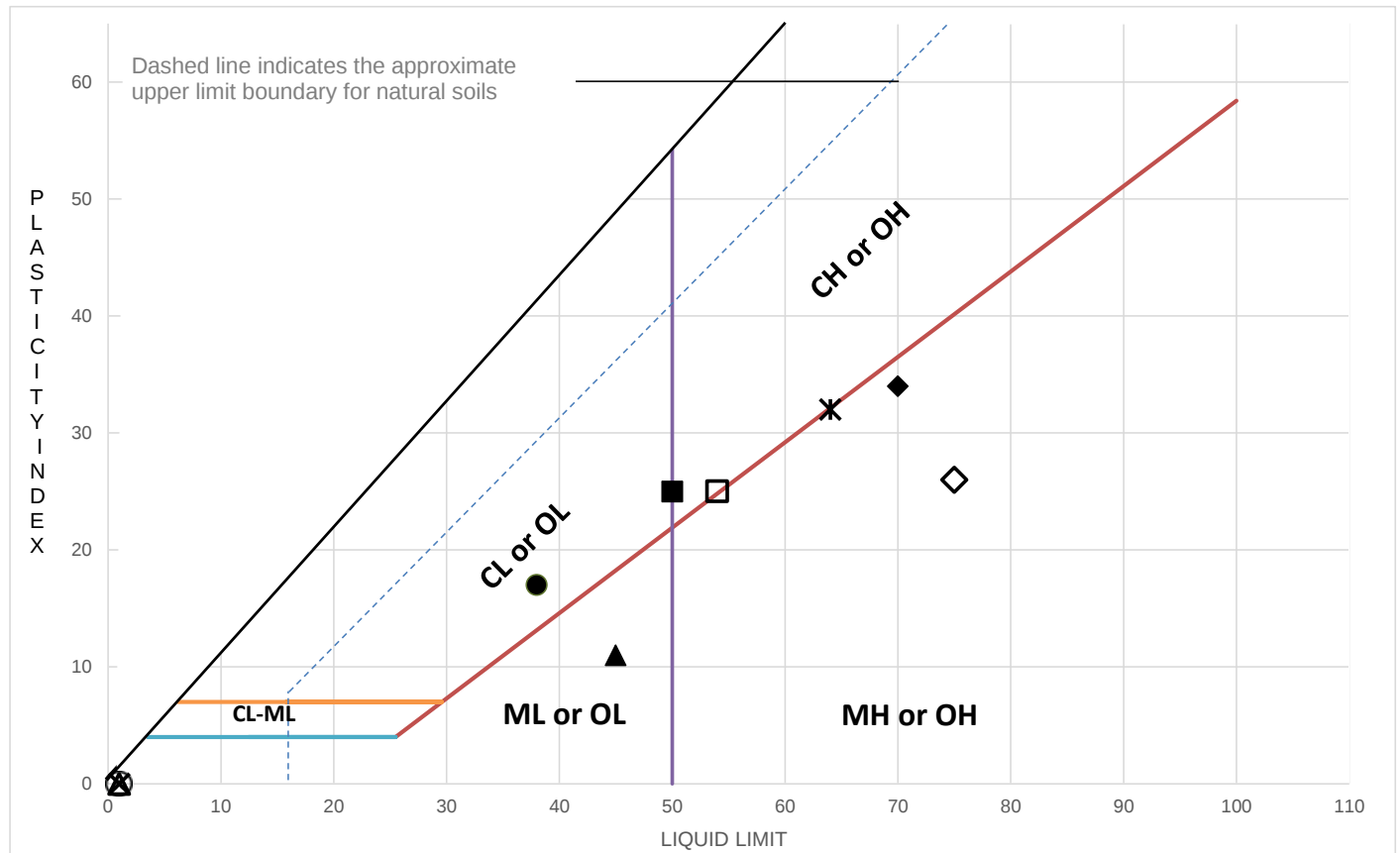
Office / Lab
ECS Mid-Atlantic LLC - Chantilly

Address
14026 Thunderbolt Place Suite 100
Chantilly, VA 20151-3232

Office Number / Fax
(703)471-8400
(703)834-5527

Tested by	Checked by	Approved by	Date Received
jvong	MUzun	MUzun	8/8/2025

LIQUID AND PLASTIC LIMITS TEST REPORT



TEST RESULTS (ASTM D4318-10 (MULTIPOINT TEST))

	Sample Location	Sample Number	Sample Depth (ft)	LL	PL	PI	%<#40	%<#200	AASHTO	USCS	Material Description
■	B-02	SS-02	3.50-5.00	50	25	25	93.9	82.8	A-7-6	CH	Red FAT CLAY with Sand
◆	SS-01	SS-02	3.50-5.00	70	36	34	98.7	86.0	A-7-5	MH	Red ELASTIC SILT
▲	SS-02	SS-04	8.50-10.00	45	34	11	96.4	86.8	A-7-5	ML	Orange Brown SILT
●	SWM-01	SS-02	3.50-5.00	38	21	17	98.8	65.7	A-6	CL	Red SANDY LEAN CLAY
*	SWM-02	SS-05	13.50-15.00	64	32	32	98.7	83.5	A-7-5	MH	Red Brown ELASTIC SILT with Sand
⊗	SWM-03	SS-08	28.50-30.00	NP	NP	NP	98.2	63.6	A-4	ML	Grey SANDY SILT with Mica
□	SWM-04	SS-04	8.50-10.00	54	29	25	91.7	65.9	A-7-6	CH	Orange SANDY FAT CLAY
◇	SWM-05	SS-04	8.50-10.00	75	49	26	99.9	97.4	A-7-5	MH	Red ELASTIC SILT
△	SWM-06	SS-05	13.50-15.00	NP	NP	NP	75.2	51.8	A-4	ML	Orange SANDY SILT
×	SWM-07	SS-06	18.50-20.00	NP	NP	NP	91.5	66.5	A-4	ML	Orange SANDY SILT

Project: Appomattox Business Center - Preliminary
Client: Kimley-Horn and Associates, Inc.

Project No.: 12:20540
Date Reported: 8/20/2025



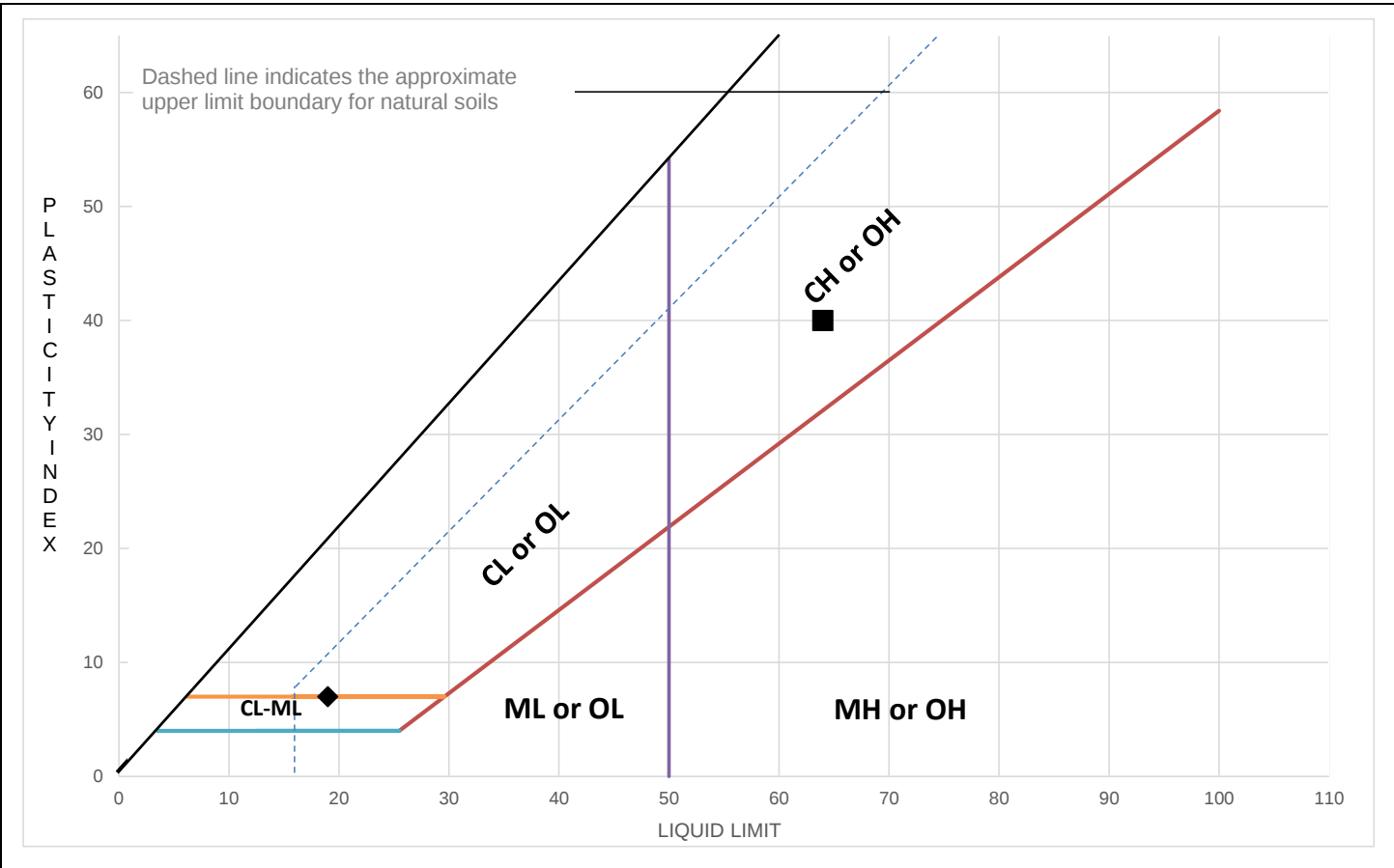
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Roanoke, VA 24019

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LIQUID AND PLASTIC LIMITS TEST REPORT



TEST RESULTS (ASTM D4318-10 (MULTIPOINT TEST))

	Sample Location	Sample Number	Sample Depth (ft)	LL	PL	PI	%<#40	%<#200	AASHTO	USCS	Material Description
■	SWM-08	SS-02	3.50-5.00	64	24	40	98.9	89.4	A-7-6	CH	Red FAT CLAY
◆	SWM-09	SS-01	1.00-2.50	19	12	7	95.8	56.7	A-4	CL-ML	Brown SANDY SILTY CLAY

Project: Appomattox Business Center - Preliminary
Client: Kimley-Horn and Associates, Inc.

Project No.: 12:20540
Date Reported: 8/20/2025



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ONE DIMENSIONAL CONSOLIDATION TEST

[illegible]

Final values should be used with caution - Cv plotted at mid point of load increments - Cv corrected to 20 degree celsius

Test Method	ASTM D2435	
Preparation		
Index tests	Liquid limit (%)	Plastic limit (%)
	36	26
Specific gravity	2.60	

Specimen details	Initial	Final
Diameter (in)	2.5	-
Height (in)	1.0	0.81
Moisture Content (%)	38.2	30.9
Bulk density (pcf)	108.19	
Dry density (pcf)	78.29	
Void Ratio	1.073	
Saturation (%)	93	
Average temperature for test (°C)	25.0	
Cc0.40	Pc6094.87	psf
Cr0.01		
Remarks		

Sample Description: Sandy Silt Yellowish Brown
Sample Source: SWM-10

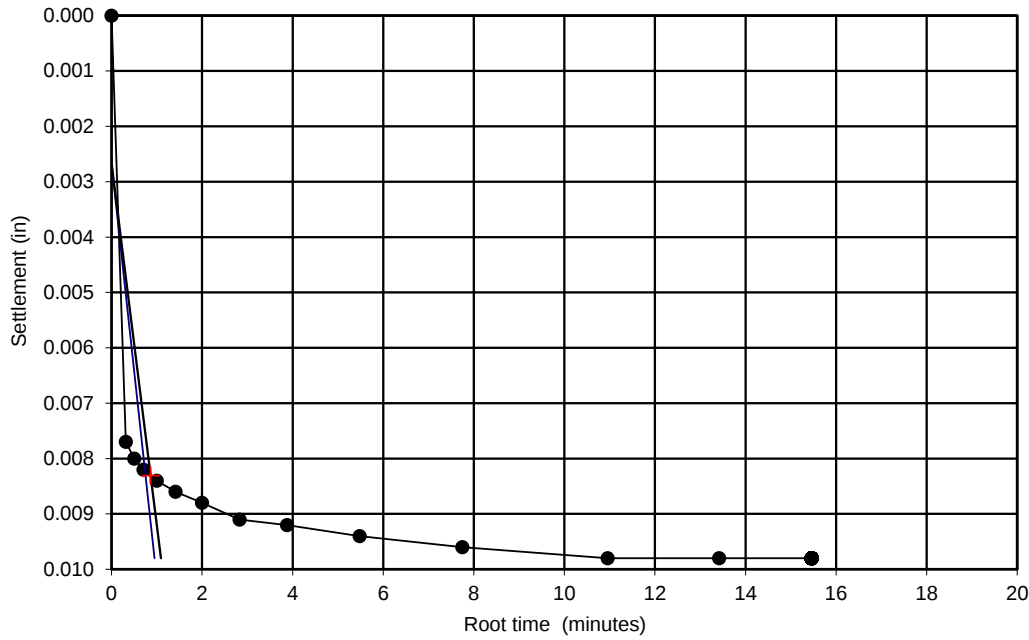
Project No.: 12:20540
Depth (ft) 15 - 17
Sample No.: ST-01
Date Reported: 8/19/2025



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Tested by	Checked by	Approved by	Date Received
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ONE DIMENSIONAL CONSOLIDATION TEST



Stage = 1

Load = 500 psf

Cv root = 2.507 ft²/day

T90 = 0.745 min

T90 Settlement = 0.008 inch

Project: Appomattox Business Center - Preliminary
 Client: Kimley-Horn and Associates, Inc.
 Sample Description: Sandy Silt Yellowish Brown
 Sample Source: SWM-10

Project No.: 12:20540
 Depth (ft) 15 - 17
 Sample No.: ST-01
 Date Reported: 8/19/2025



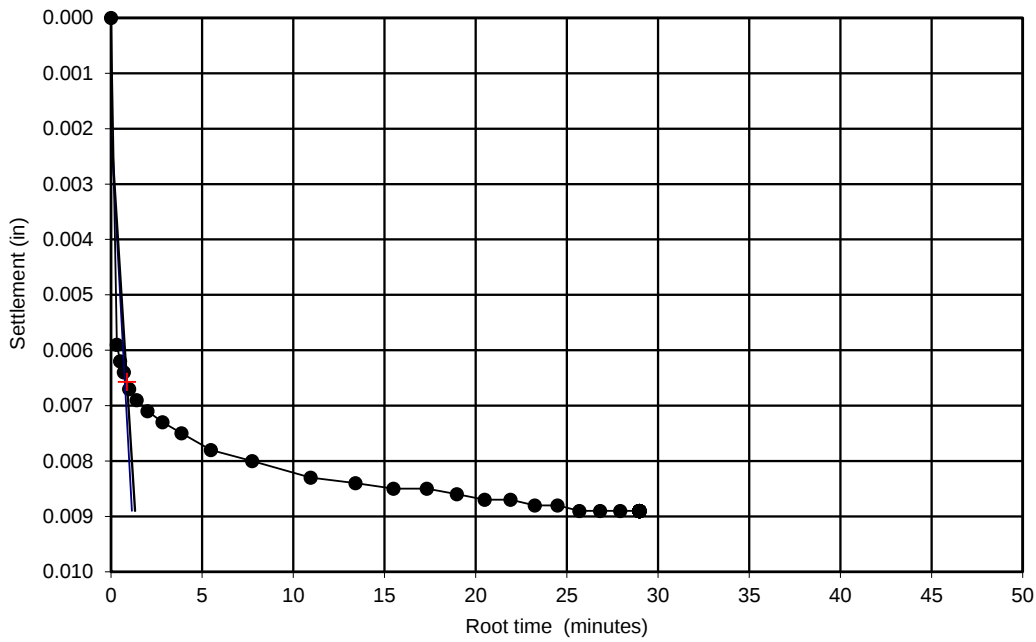
Office / Lab
 ECS Mid-Atlantic LLC - Chantilly

Address
 14026 Thunderbolt Place Suite 100 Chantilly,
 VA 20151-3232

Office Number / Fax
 (703)471-8400
 (703)834-5527

Tested by	Checked by	Approved by	Date Received
jvong	MUZun	MUZun	8/8/2025

ONE DIMENSIONAL CONSOLIDATION TEST



Stage = 2

Load = 1000 psf

Cv root = 2.41819 ft²/day

T90 = 0.76082 min

T90 Settlement = 0.00657 inch

Project: Appomattox Business Center - Preliminary
 Client: Kimley-Horn and Associates, Inc.
 Sample Description: Sandy Silt Yellowish Brown
 Sample Source: SWM-10

Project No.: 12:20540
 Depth (ft) 15 - 17
 Sample No.: ST-01
 Date Reported: 8/19/2025



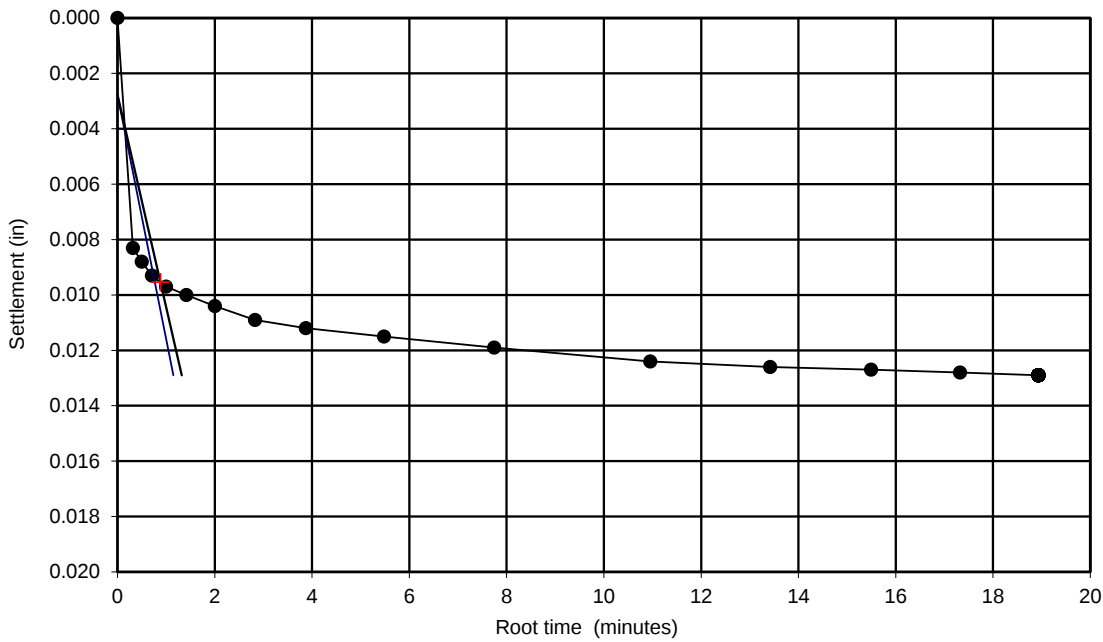
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Tested by	Checked by	Approved by	Date Received
jvong	MUzun	MUzun	8/8/2025

ONE DIMENSIONAL CONSOLIDATION TEST



Stage = 3

Load = 2000 psf

Cv root = 2.3 ft²/day

T90 = 0.78 min

T90 Settlement = 0.01 inch

Project: Appomattox Business Center - Preliminary
 Client: Kimley-Horn and Associates, Inc.
 Sample Description: Sandy Silt Yellowish Brown
 Sample Source: SWM-10

Project No.: 12:20540
 Depth (ft) 15 - 17
 Sample No.: ST-01
 Date Reported: 8/19/2025



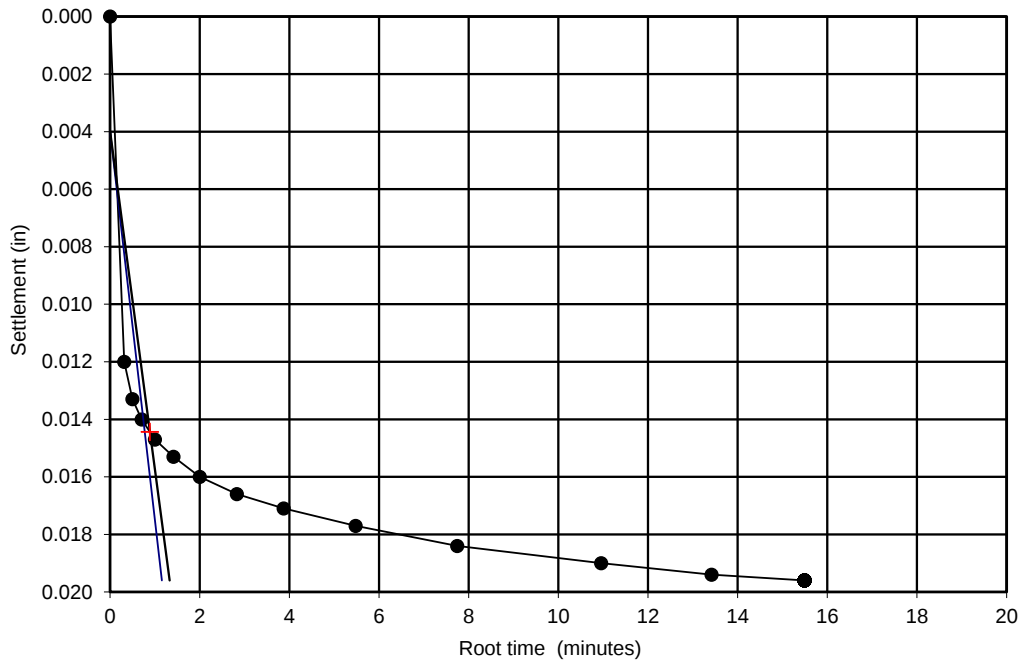
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Tested by	Checked by	Approved by	Date Received
jvong	MUzun	MUzun	8/8/2025

ONE DIMENSIONAL CONSOLIDATION TEST



Stage = 4

Load = 4000 psf

Cv root = 2.182 ft²/day

T90 = 0.792 min

T90 Settlement = 0.014 inch

Project: Appomattox Business Center - Preliminary
 Client: Kimley-Horn and Associates, Inc.
 Sample Description: Sandy Silt Yellowish Brown
 Sample Source: SWM-10

Project No.: 12:20540
 Depth (ft) 15 - 17
 Sample No.: ST-01
 Date Reported: 8/19/2025



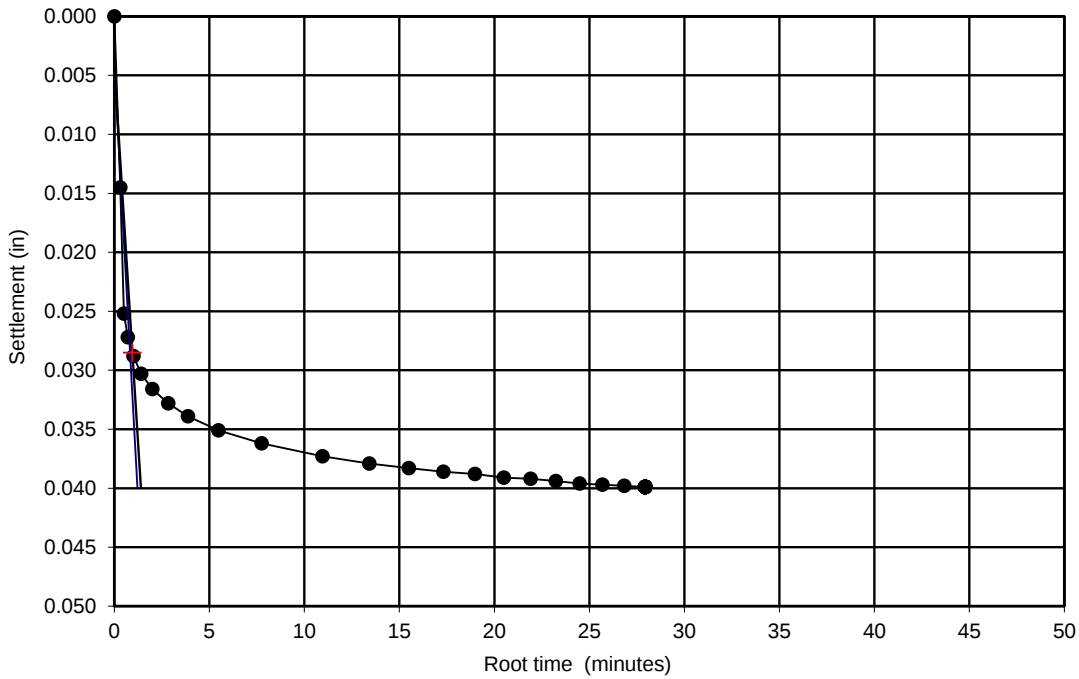
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Tested by	Checked by	Approved by	Date Received
jvong	MUzun	MUzun	8/8/2025

ONE DIMENSIONAL CONSOLIDATION TEST



Stage = 5

Load = 8000 psf

Cv root = 1.8284 ft²/day

T90 = 0.8981 min

T90 Settlement = 0.0285 inch

Project: Appomattox Business Center - Preliminary
 Client: Kimley-Horn and Associates, Inc.
 Sample Description: Sandy Silt Yellowish Brown
 Sample Source: SWM-10

Project No.: 12:20540
 Depth (ft) 15 - 17
 Sample No.: ST-01
 Date Reported: 8/19/2025



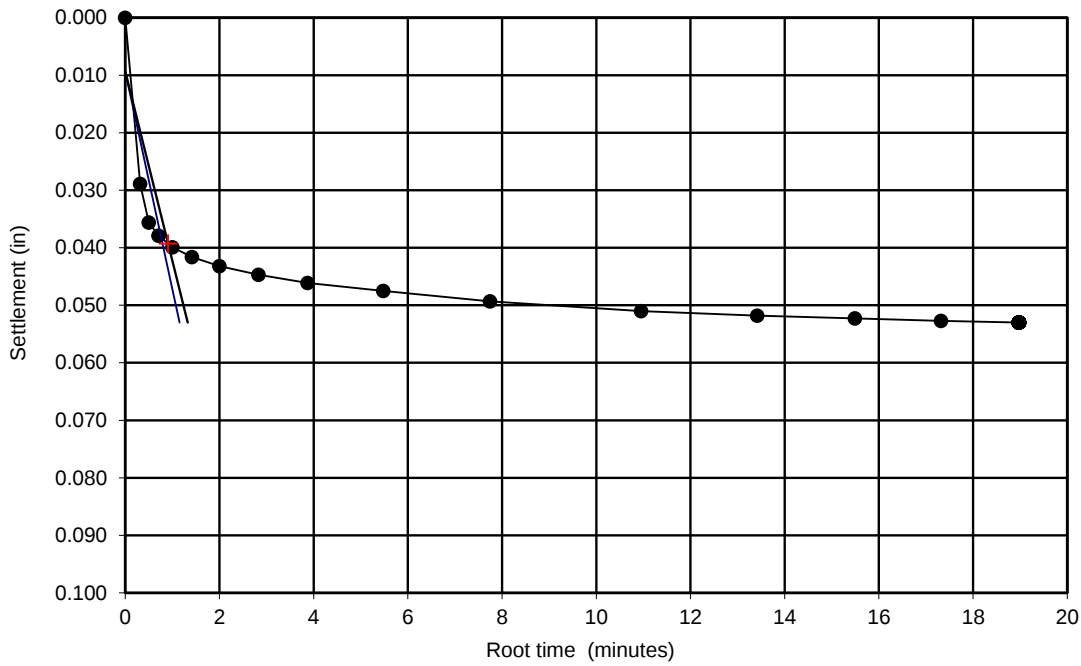
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Tested by	Checked by	Approved by	Date Received
jvong	MUzun	MUzun	8/8/2025

ONE DIMENSIONAL CONSOLIDATION TEST



Stage = 6

Load = 16000 psf

Cv root = 1.7694 ft²/day

T90 = 0.8264 min

T90 Settlement = 0.0393 inch

Project: Appomattox Business Center - Preliminary
 Client: Kimley-Horn and Associates, Inc.
 Sample Description: Sandy Silt Yellowish Brown
 Sample Source: SWM-10

Project No.: 12:20540
 Depth (ft) 15 - 17
 Sample No.: ST-01
 Date Reported: 8/19/2025



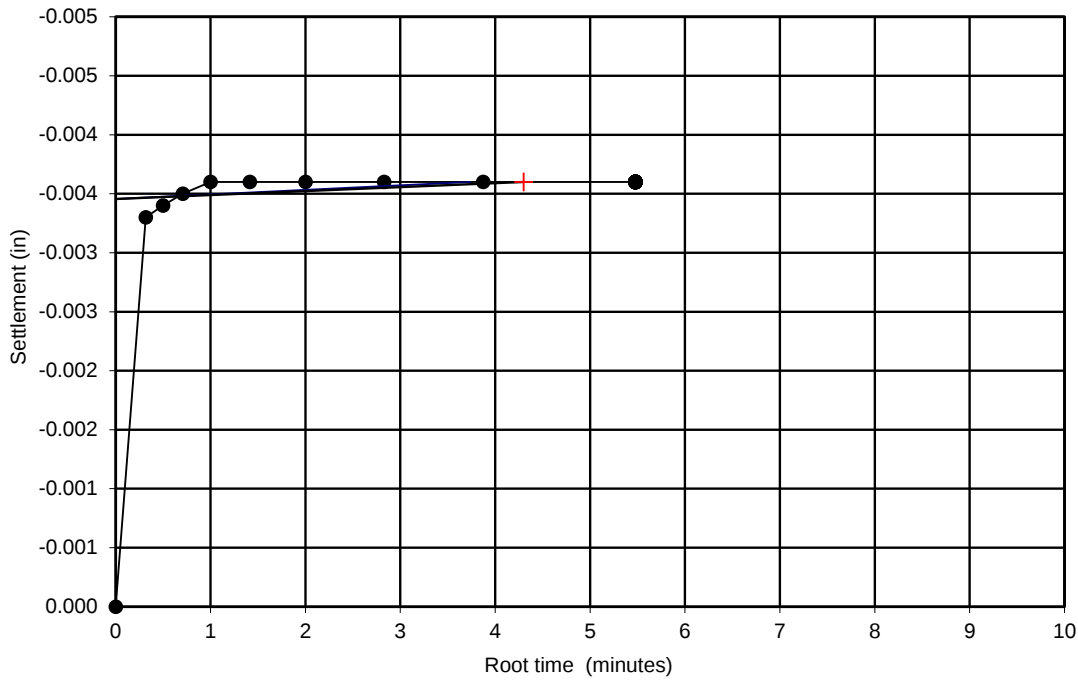
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Tested by	Checked by	Approved by	Date Received
jvong	MUzun	MUzun	8/8/2025

ONE DIMENSIONAL CONSOLIDATION TEST



Stage = 7

Load = 4000 psf

Cv root = 0.0767 ft²/day

T90 = 18.482 min

T90 Settlement =

Project: Appomattox Business Center - Preliminary
 Client: Kimley-Horn and Associates, Inc.
 Sample Description: Sandy Silt Yellowish Brown
 Sample Source: SWM-10

Project No.: 12:20540
 Depth (ft) 15 - 17
 Sample No.: ST-01
 Date Reported: 8/19/2025



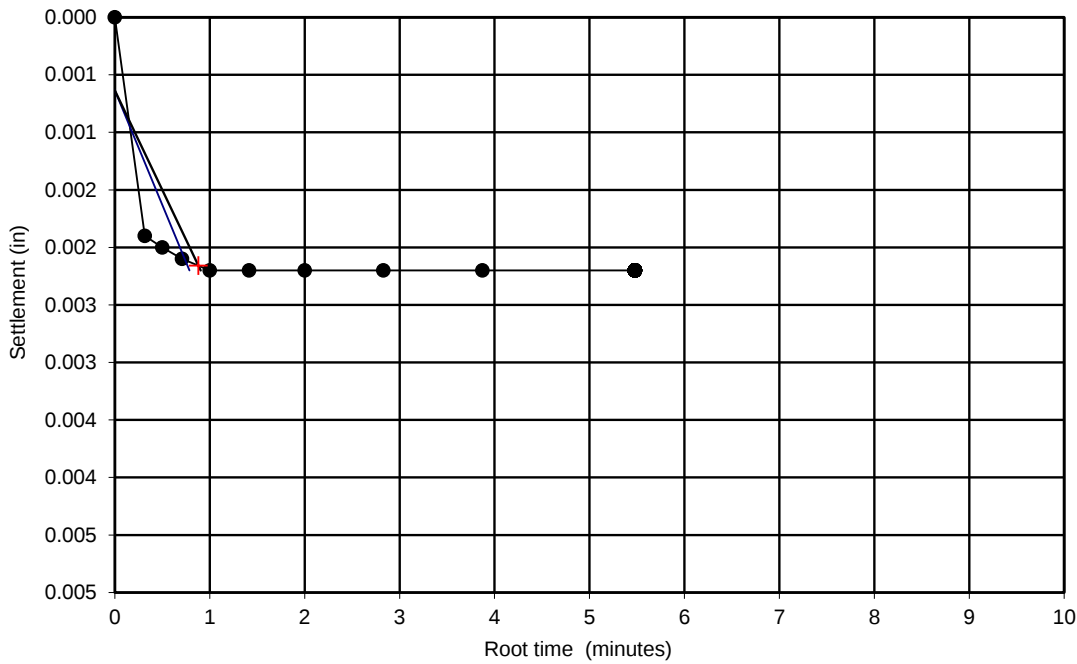
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 (703)834-5527

Tested by	Checked by	Approved by	Date Received
jvong	MUzun	MUzun	8/8/2025

ONE DIMENSIONAL CONSOLIDATION TEST



Stage = 8

Load = 8000 psf

Cv root = 1.7989 ft²/day

T90 = 0.775 min

T90 Settlement = 0.0022 inch

Project: Appomattox Business Center - Preliminary
 Client: Kimley-Horn and Associates, Inc.
 Sample Description: Sandy Silt Yellowish Brown
 Sample Source: SWM-10

Project No.: 12:20540
 Depth (ft) 15 - 17
 Sample No.: ST-01
 Date Reported: 8/19/2025



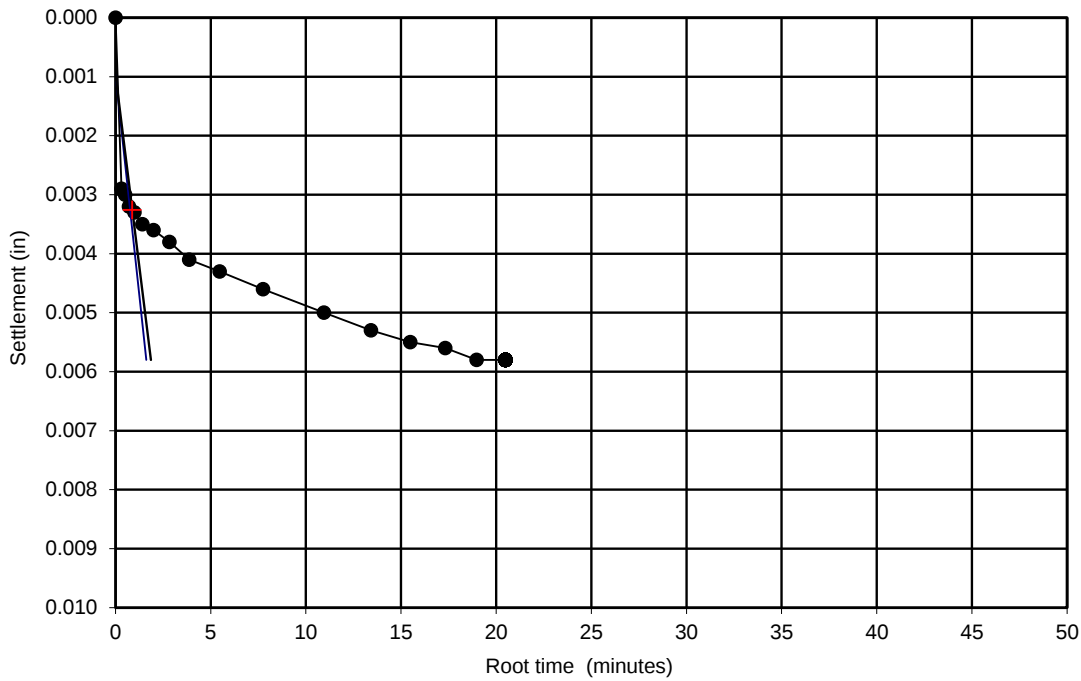
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Tested by	Checked by	Approved by	Date Received
jvong	MUzun	MUzun	8/8/2025

ONE DIMENSIONAL CONSOLIDATION TEST



Stage = 9

Load = 16000 psf

Cv root = 1.7694 ft²/day

T90 = 0.7751 min

T90 Settlement = 0.0033 inch

Project: Appomattox Business Center - Preliminary
 Client: Kimley-Horn and Associates, Inc.
 Sample Description: Sandy Silt Yellowish Brown
 Sample Source: SWM-10

Project No.: 12:20540
 Depth (ft) 15 - 17
 Sample No.: ST-01
 Date Reported: 8/19/2025



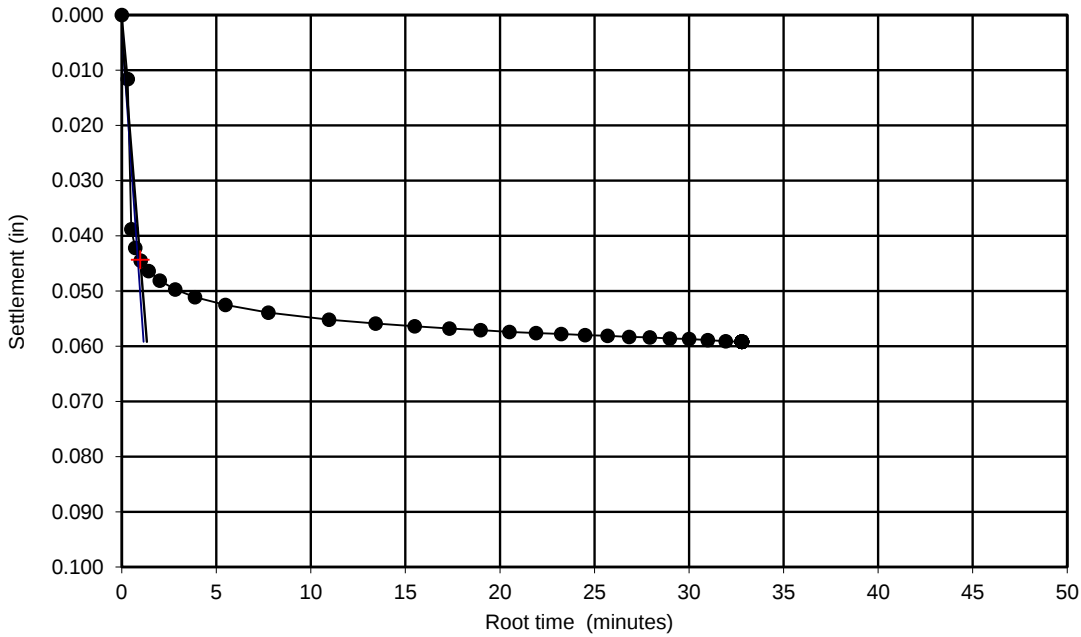
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Tested by	Checked by	Approved by	Date Received
jvong	MUzun	MUzun	8/8/2025

ONE DIMENSIONAL CONSOLIDATION TEST



Stage = 10

Load = 32000 psf

Cv root = 1.3271 ft²/day

T90 = 0.9556 min

T90 Settlement = 0.0443 inch

Project: Appomattox Business Center - Preliminary
 Client: Kimley-Horn and Associates, Inc.
 Sample Description: Sandy Silt Yellowish Brown
 Sample Source: SWM-10

Project No.: 12:20540
 Depth (ft) 15 - 17
 Sample No.: ST-01
 Date Reported: 8/19/2025



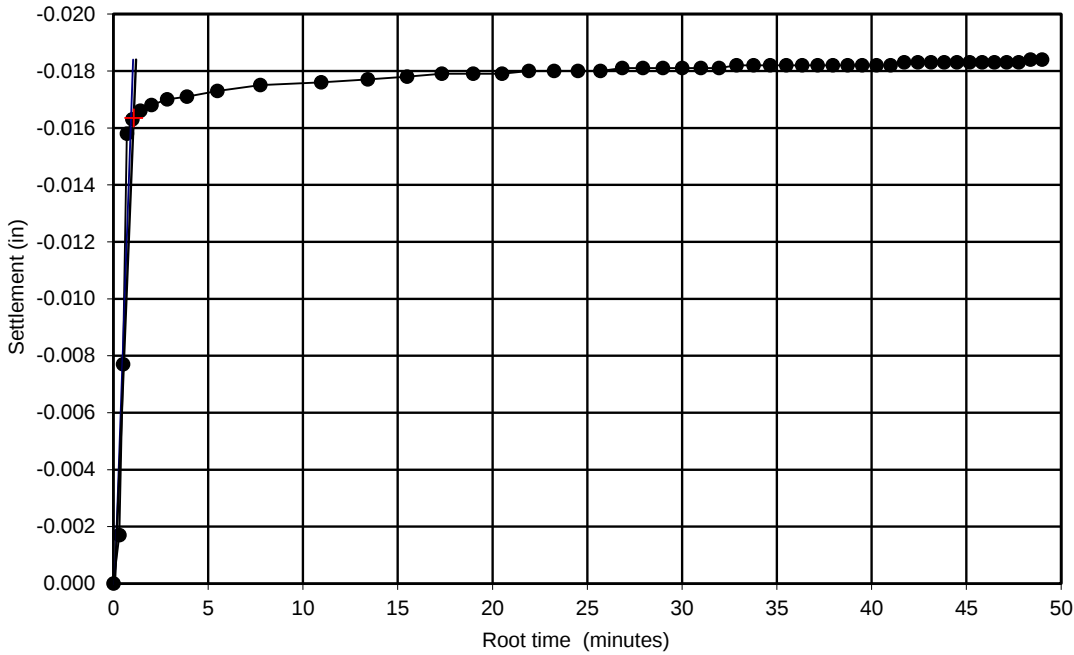
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 VA 20151-3232

Office Number / Fax
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 (703)834-5527

Tested by	Checked by	Approved by	Date Received
jvong	MUzun	MUzun	8/8/2025

ONE DIMENSIONAL CONSOLIDATION TEST



Stage = 11

Load = 500 psf

Cv root = 1.0616 ft²/day

T90 = 1.1435 min

T90 Settlement =

Project: Appomattox Business Center - Preliminary
 Client: Kimley-Horn and Associates, Inc.
 Sample Description: Sandy Silt Yellowish Brown
 Sample Source: SWM-10

Project No.: 12:20540
 Depth (ft) 15 - 17
 Sample No.: ST-01
 Date Reported: 8/19/2025



Office / Lab
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Address
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 VA 20151-3232

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 (703)834-5527

Tested by	Checked by	Approved by	Date Received
jvong	MUzun	MUzun	8/8/2025



Direct Shear Test

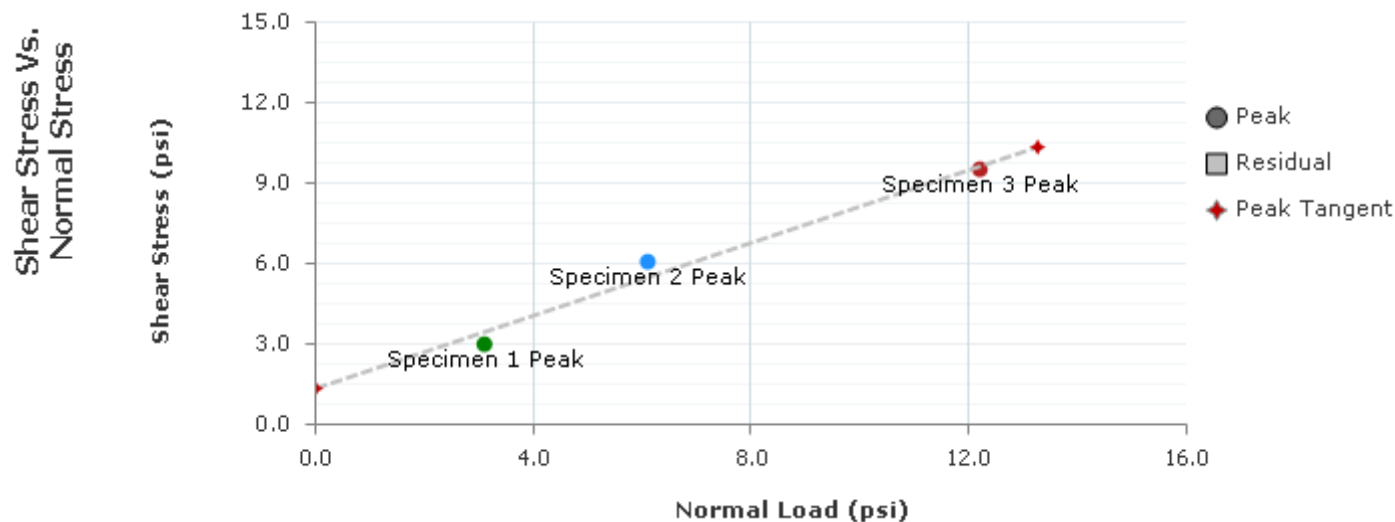
ASTM D3080

Project: Appomattox Business Center - Preliminary

Project Number: 12 20540

Location: B-01A

Client Name: Kimley-Horn and Associates, Inc.



C (psi): 1.3

Residual C (psi): NA

Phi (°): 34.2

Residual Phi (°): NA

	Specimen Number							
Initial	1	2	3	4	5	6	7	8
Moisture (%):	41.8	42.9	41.2					
Dry Density (pcf):	71.6	65.0	66.0					
Void Ratio:	1.310	1.547	1.505					
Saturation (%):	84.6	73.5	72.6					
Diameter (in):	2.5000	2.5000	2.5000					
Height (in):	1.0000	1.0000	1.0000					
Final	1	2	3	4	5	6	7	8
Moisture (%):	57.2	61.5	59.7					
Dry Density (pcf):	74.0	66.9	65.7					
Void Ratio:	1.234	1.473	1.519					
Saturation (%):	122.8	110.6	104.2					
Height (in):	0.9699	0.9779	0.9972					
Normal Stress (psi):	3.1	6.1	12.2					
Peak Shear Stress (psi):	3.0	6.1	9.5					
Residual Stress (psi):	NA	NA	NA					
Horizontal Deformation (%):	1.5	2.5	3.0					
Rate (in/min):	0.000347	0.000347	0.000347					

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Checked By: Mehmet Uzun Approved By: Scott Nelson Date: 8/19/2025



Direct Shear Test

ASTM D3080

Project: Appomattox Business Center - Preliminary

Project Number: 12 20540

Sampling Date: 8/21/2025

Sample Number: ST-01

Sample Depth: 6.0-8.0 ft

Location: B-01A

Client Name: Kimley-Horn and Associates, Inc.

Remarks:

Information Parameters	1	2	3	4	5	6	7	8
Liquid Limit:	51	51	51					
Plastic Limit:	33	33	33					
Specific Gravity:	2.65	2.65	2.65					
Specific Gravity Method:	ASSUMED	ASSUMED	ASSUMED					
Initial Parameters	1	2	3	4	5	6	7	8
Test Temperature (°C):	23.0	23.0	23.0					
Sample Shape:	ROUND	ROUND	ROUND					
Height (in):	1.0000	1.0000	1.0000					
Diameter (in):	2.5000	2.5000	2.5000					
Area (in²):	4.909	4.909	4.909					
Volume (in³):	4.9087	4.9087	4.9087					
Moisture (%):	41.8	42.9	41.2					
Dry Density (pcf):	71.6	65.0	66.0					
Wet Density (pcf):	101.6	92.8	93.3					
Saturation (%):	84.6	73.5	72.6					
Void Ratio:	1.310	1.547	1.505					
Porosity (%):	56.7	60.7	60.1					
Consolidation Parameters	1	2	3	4	5	6	7	8
Initial Reference Height (in):	1.0000	1.0000	1.0000					
Final Reference Height (in):	0.9699	0.9779	0.9972					
Height (in):	0.9699	0.9779	0.9972					
Final Parameters	1	2	3	4	5	6	7	8
Moisture Content (%)	57.2	61.5	59.7					
Dry Density (pcf):	74.0	66.9	65.7					
Wet Density (pcf):	116.4	108.0	104.9					
Saturation (%):	122.8	110.6	104.2					
Void Ratio:	1.234	1.473	1.519					
Porosity (%):	55.2	59.6	60.3					

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540



Direct Shear Test

ASTM D3080

Specimen 1

Test Description: Peak Direct Shear Test
Other Associated Tests: LL,PSD,MC
Device Details: HM 5750D DS-6
Test Specification: ASTM D3080
Test Time: 8/15/2025
Technician: Htran
Specimen Code: _
Specimen Description: Elastic Silt with Sand Yellowish Brown
Specific Gravity: 2.65
Plastic Limit: 33
Test Remarks:

Sampling Method: Undisturbed
Specimen Lab #: 1735-1
Liquid Limit: 51

Specimen 2

Test Description: Peak Direct Shear Test
Other Associated Tests: LL,PSD,MC
Device Details: HM 5750D DS-7
Test Specification: ASTM D3080
Test Time: 8/15/2025
Technician: THtran
Specimen Code: _
Specimen Description: Elastic Silt with Sand Yellowish Brown
Specific Gravity: 2.65
Plastic Limit: 33
Test Remarks:

Sampling Method: Undisturbed
Specimen Lab #: 1735-1
Liquid Limit: 51



Direct Shear Test

ASTM D3080

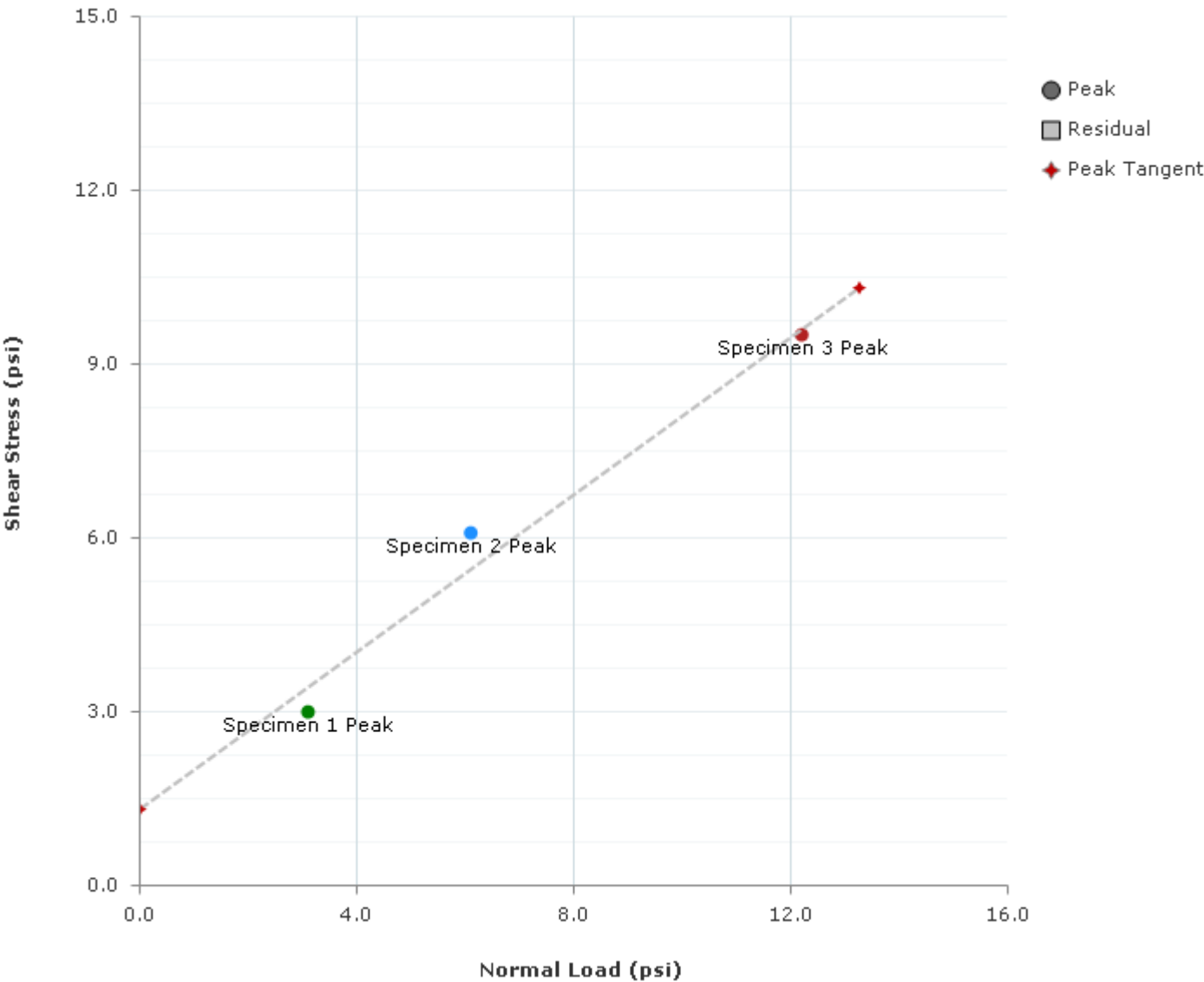
Specimen 3

Test Description:	Peak Direct Shear Test	
Other Associated Tests:	LL,PSD,MC	
Device Details:	HM 5750D DS-8	
Test Specification:	ASTM D3080	
Test Time:	8/15/2025	
Technician:	THtran	Sampling Method: Undisturbed
Specimen Code:	_	Specimen Lab #: 1735-1
Specimen Description:	Elastic Silt with Sand Yellowish Brown	
Specific Gravity:	2.65	
Plastic Limit:	33	Liquid Limit: 51
Test Remarks:		



Direct Shear Test - Shear Stress Vs. Normal Stress

ASTM D3080



Normal Load (psi)		
Tangent Results	C (psi)	Phi (°)
Peak Tangent:	1.3	34.2
Residual Tangent:	NA	NA



Graph - Stress Deformation

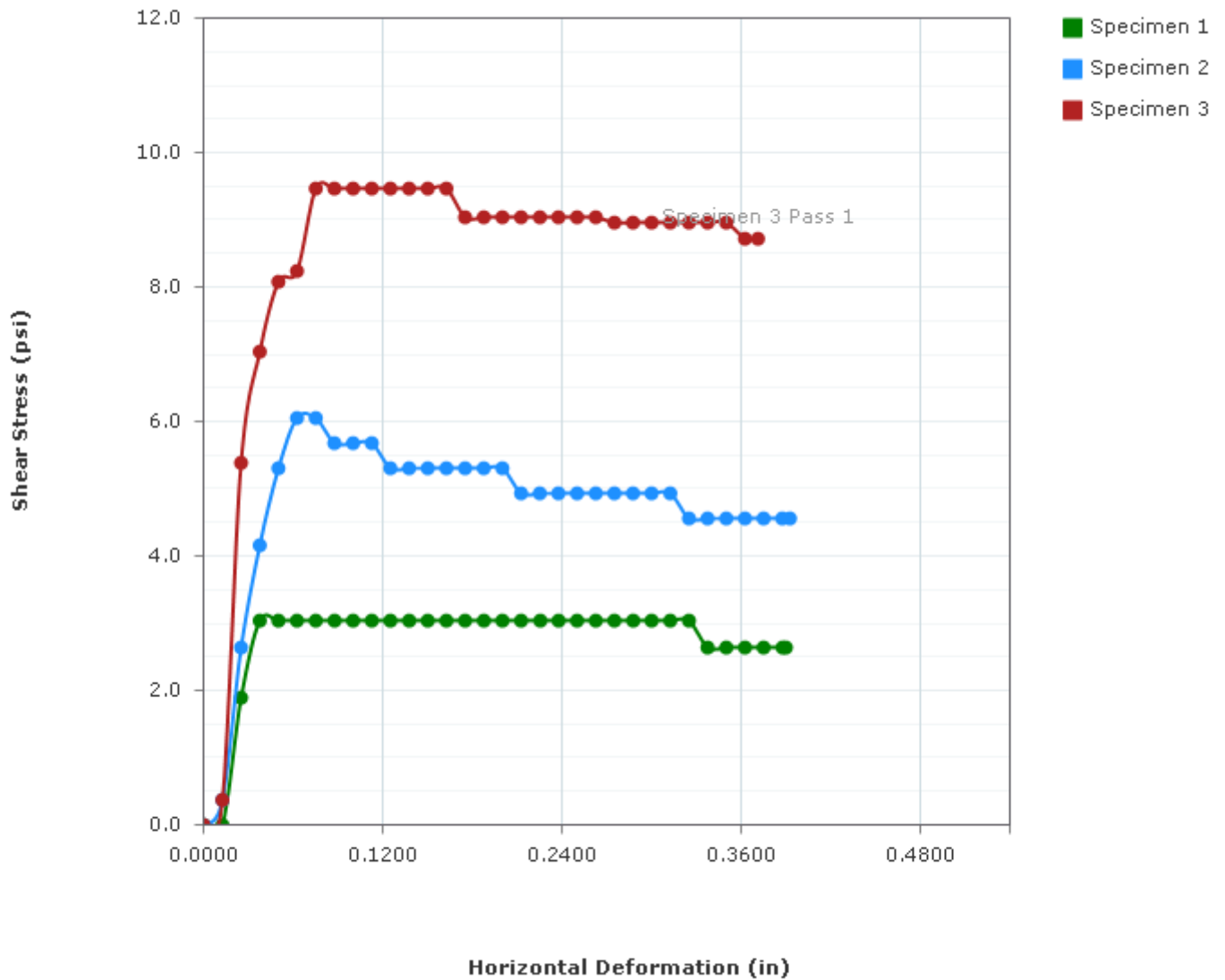
ASTM D3080

ECS MID-ATLANTIC, LLC

14026 Thunderbolt place, Suite100, Chantilly, VA 20151

703 471 8400

703 834 5527



Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Consol Test - Specimen 1 - Sequence 1 - 0.220 (tsf)

ASTM D3080

LIMS Code: [TO COME FROM LIMS] LIMS Specimen Code: [TO COME FROM LIMS]

Index	Elapsed Time (hh:mm:ss)	Load (Lbf)	Load (Lbf)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.0	0.6148	0.0000	0.0	1.31
1	00:00:06	0.0	0.5942	0.0206	2.1	1.26
2	00:00:15	0.0	0.5901	0.0247	2.5	1.25
3	00:00:30	0.0	0.5883	0.0265	2.6	1.24
4	00:01:00	0.0	0.5873	0.0275	2.7	1.24
5	00:02:00	0.0	0.5867	0.0281	2.8	1.24
6	00:04:00	0.0	0.5863	0.0285	2.9	1.24
7	00:08:00	0.0	0.5859	0.0289	2.9	1.24
8	00:15:00	0.0	0.5856	0.0292	2.9	1.24
9	00:30:00	0.0	0.5852	0.0296	3.0	1.24
10	01:00:00	0.0	0.5849	0.0299	3.0	1.24
11	01:31:58	0.0	0.5847	0.0301	3.0	1.24

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Technician: Htran

Test Date: 8/14/2025

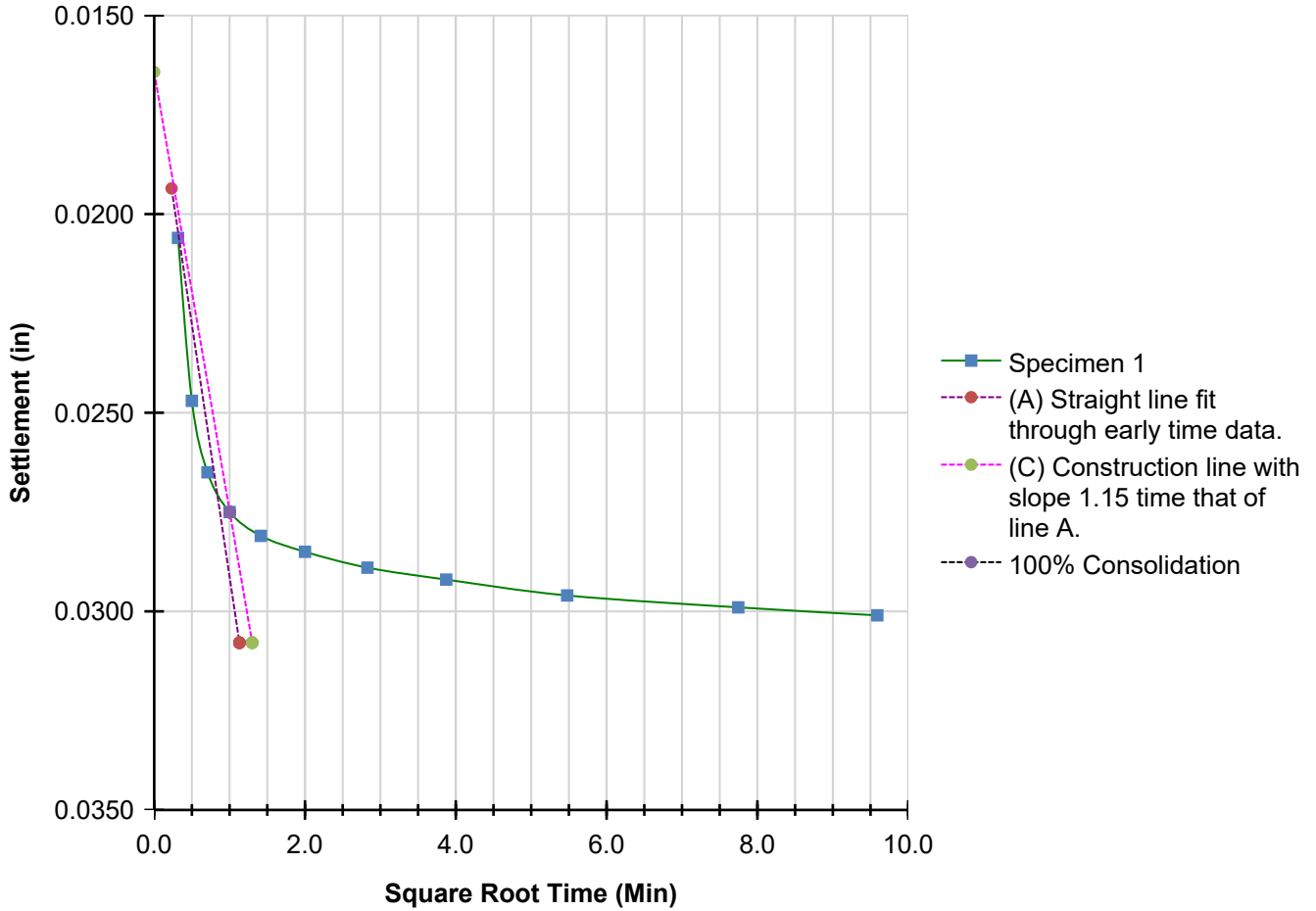
Report Created: 8/18/2025

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Square Root Time - Specimen 1 - Sequence 1 - 0.220 (tsf)

ASTM D3080



Tangent Construction Results

T90 (Min):	1.006
T50 (Min):	0.162
Cv (in ² /Min):	0.19818

Consol Test - Specimen 2 - Sequence 1 - 0.440 (tsf)

ASTM D3080

LIMS Code: [TO COME FROM LIMS] LIMS Specimen Code: [TO COME FROM LIMS]

Index	Elapsed Time (hh:mm:ss)	Load (Lbf)	Load (Lbf)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.0	0.5468	0.0000	0.0	1.55
1	00:00:06	0.0	0.5281	0.0187	1.9	1.49
2	00:00:15	0.0	0.5268	0.0200	2.0	1.49
3	00:00:30	0.0	0.5263	0.0205	2.1	1.49
4	00:01:00	0.0	0.5261	0.0207	2.1	1.49
5	00:02:00	0.0	0.5259	0.0209	2.1	1.49
6	00:04:00	0.0	0.5256	0.0212	2.1	1.49
7	00:08:00	0.0	0.5254	0.0214	2.1	1.49
8	00:15:00	0.0	0.5253	0.0215	2.1	1.49
9	00:30:00	0.0	0.5251	0.0217	2.2	1.49
10	01:00:00	0.0	0.5248	0.0220	2.2	1.49
11	01:34:01	0.0	0.5247	0.0221	2.2	1.49

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Technician: THtran

Test Date: 8/14/2025

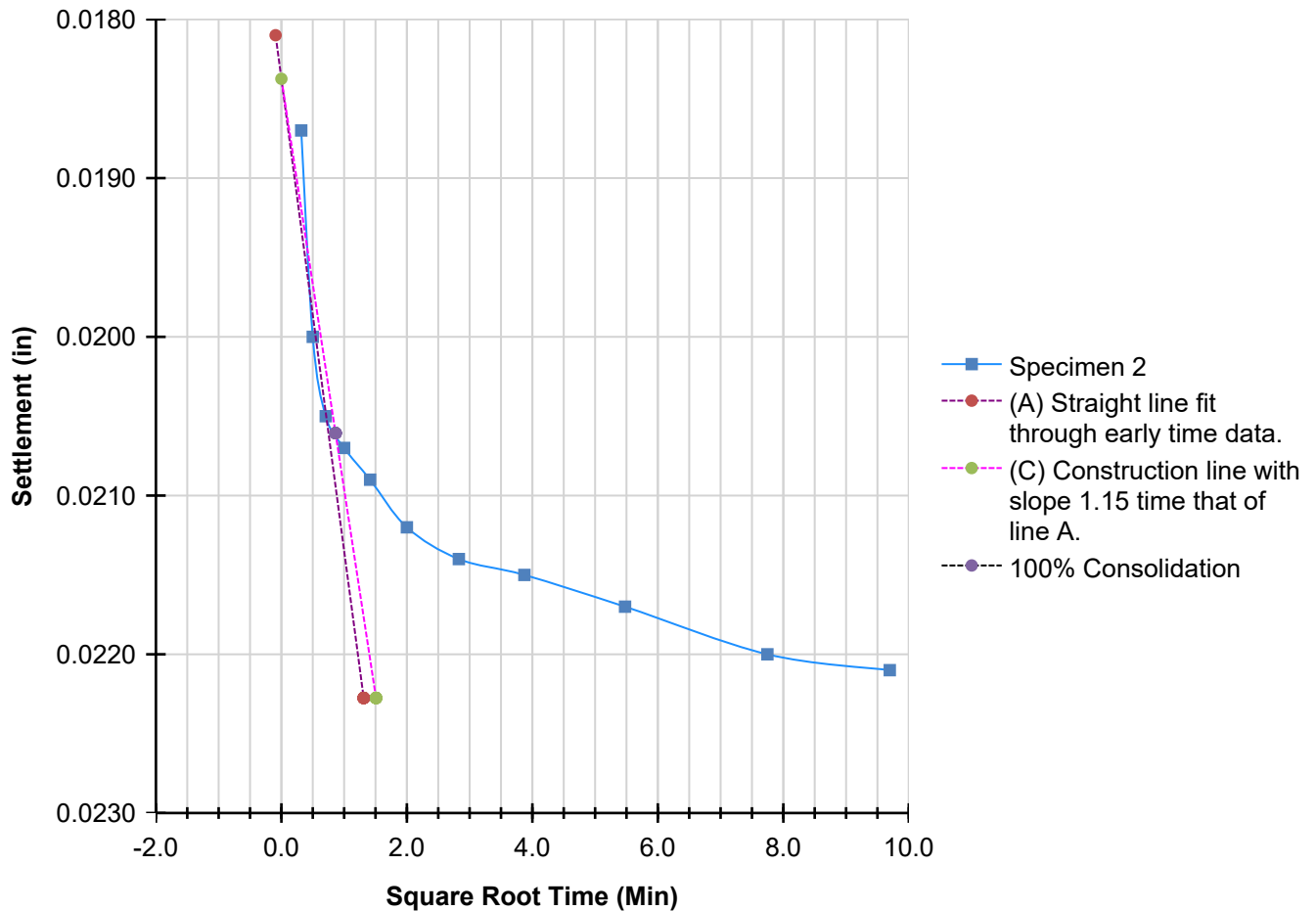
Report Created: 8/18/2025

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Square Root Time - Specimen 2 - Sequence 1 - 0.440 (tsf)

ASTM D3080



Tangent Construction Results

T90 (Min):	0.745
T50 (Min):	0.200
Cv (in ² /Min):	0.27216

Consol Test - Specimen 3 - Sequence 1 - 0.880 (tsf)

ASTM D3080

LIMS Code: [TO COME FROM LIMS] LIMS Specimen Code: [TO COME FROM LIMS]

Index	Elapsed Time (hh:mm:ss)	Load (Lbf)	Load (Lbf)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.0	0.6287	0.0000	0.0	1.50
1	00:00:06	0.0	0.6101	0.0000	0.0	1.50
2	00:00:15	0.0	0.6089	0.0012	0.1	1.50
3	00:00:30	0.0	0.6086	0.0015	0.2	1.50
4	00:01:00	0.0	0.6084	0.0017	0.2	1.50
5	00:02:00	0.0	0.6082	0.0019	0.2	1.50
6	00:04:00	0.0	0.6080	0.0021	0.2	1.50
7	00:08:00	0.0	0.6079	0.0022	0.2	1.49
8	00:15:00	0.0	0.6077	0.0024	0.2	1.49
9	00:30:00	0.0	0.6076	0.0025	0.2	1.49
10	01:00:00	0.0	0.6074	0.0027	0.3	1.49
11	01:32:43	0.0	0.6073	0.0028	0.3	1.49

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Technician: THtran

Test Date: 8/14/2025

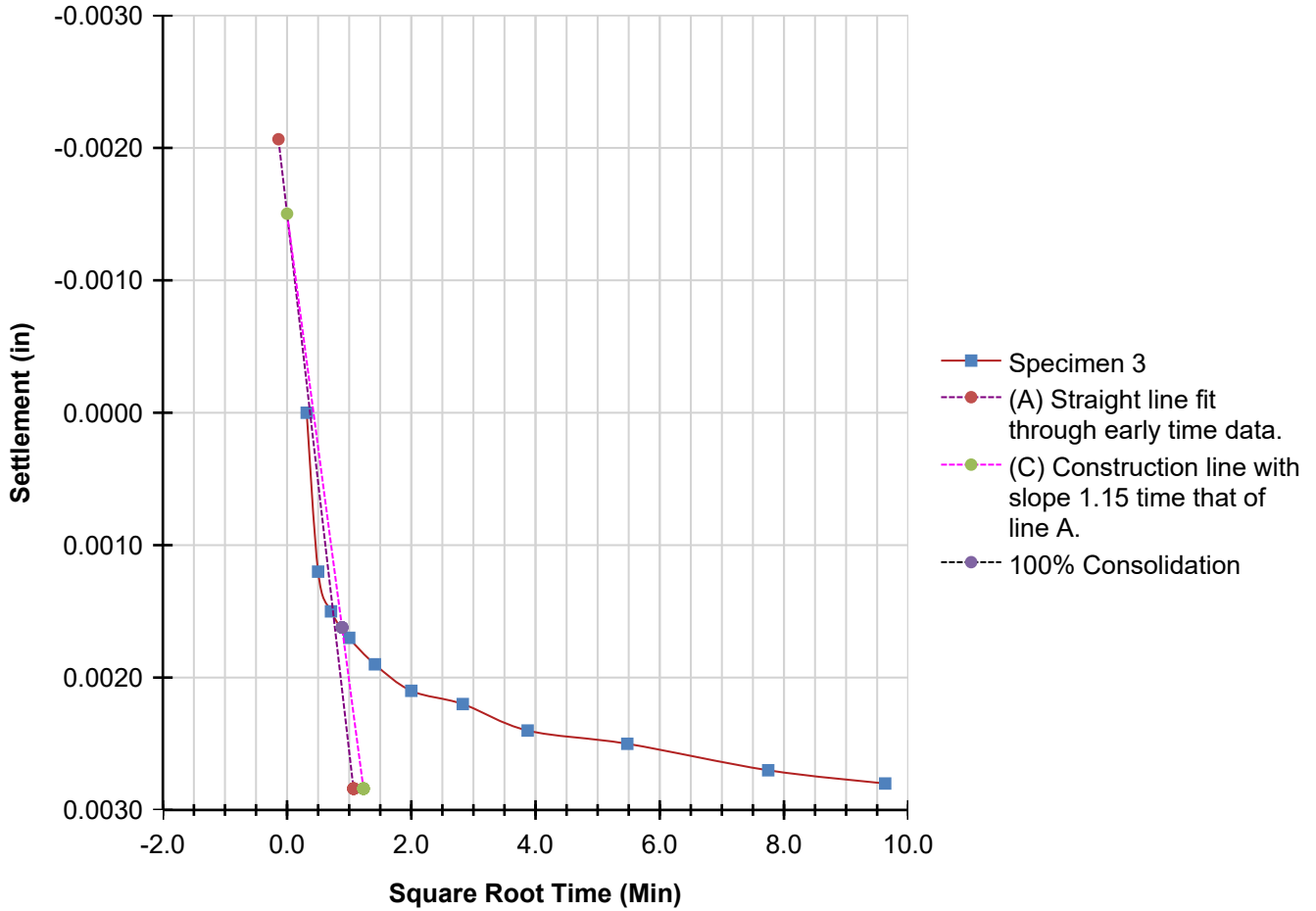
Report Created: 8/18/2025

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Square Root Time - Specimen 3 - Sequence 1 - 0.880 (tsf)

ASTM D3080



Tangent Construction Results

T90 (Min):	0.783
T50 (Min):	0.124
Cv (in ² /Min):	0.26921



Direct Shear Test

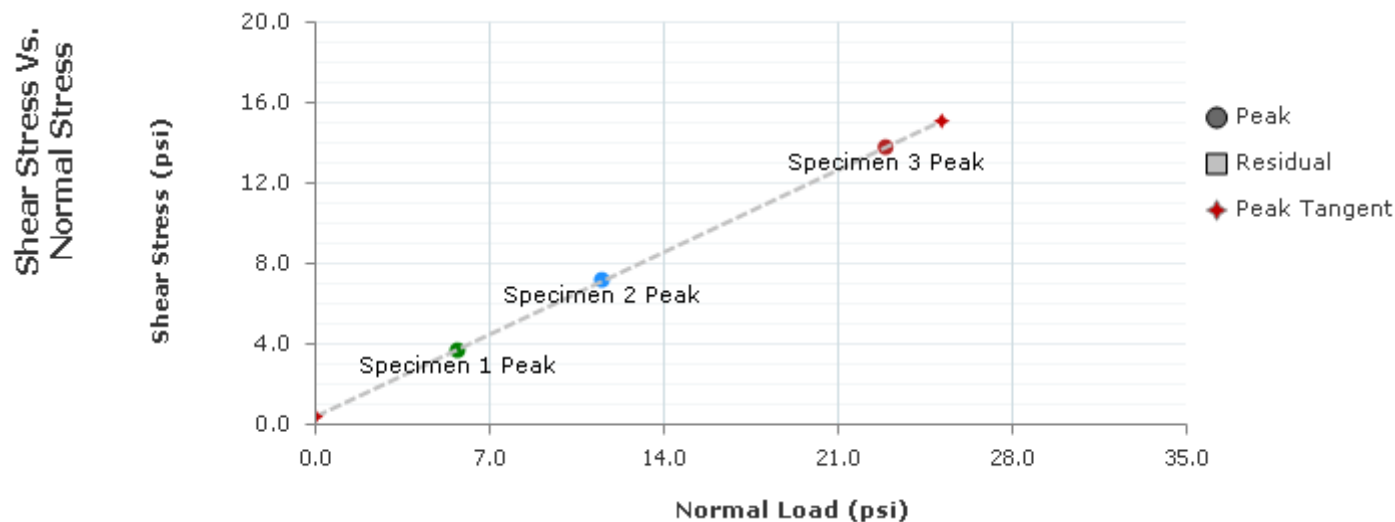
ASTM D3080

Project: Appomattox Business Center - Preliminary

Project Number: 12 20540

Location: SS-01

Client Name: Kimley-Horn and Associates, Inc.



C (psi): 0.4

Phi (°): 30.2

Residual C (psi): NA

Residual Phi (°): NA

	Specimen Number							
Initial	1	2	3	4	5	6	7	8
Moisture (%):	35.1	28.3	36.6					
Dry Density (pcf):	84.4	91.1	79.5					
Void Ratio:	0.961	0.816	1.081					
Saturation (%):	96.7	92.0	89.8					
Diameter (in):	2.5000	2.5000	2.5000					
Height (in):	1.0000	1.0000	1.0000					
Final	1	2	3	4	5	6	7	8
Moisture (%):	41.0	35.7	40.0					
Dry Density (pcf):	86.6	90.7	86.6					
Void Ratio:	0.911	0.823	0.910					
Saturation (%):	119.3	114.9	116.4					
Height (in):	0.9408	0.9768	0.8400					
Normal Stress (psi):	5.7	11.5	22.9					
Peak Shear Stress (psi):	3.7	7.2	13.8					
Residual Stress (psi):	NA	NA	NA					
Horizontal Deformation (%):	6.0	4.0	4.5					
Rate (in/min):	0.000347	0.000347	0.000347					

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Checked By: Mehmet Uzun Approved By: Scott Nelson Date: 8/19/2025



Direct Shear Test

ASTM D3080

Project: Appomattox Business Center - Preliminary

Project Number: 12 20540

Sampling Date: 8/13/2025

Sample Number: ST-01

Sample Depth: 15.0-16.0 ft

Location: SS-01

Client Name: Kimley-Horn and Associates, Inc.

Remarks:

Information Parameters	1	2	3	4	5	6	7	8
Liquid Limit:	NP	NP	NP					
Plastic Limit:	NP	NP	NP					
Specific Gravity:	2.65	2.65	2.65					
Specific Gravity Method:	ASSUMED	ASSUMED	ASSUMED					
Initial Parameters	1	2	3	4	5	6	7	8
Test Temperature (°C):	23.0	23.0	23.0					
Sample Shape:	ROUND	ROUND	ROUND					
Height (in):	1.0000	1.0000	1.0000					
Diameter (in):	2.5000	2.5000	2.5000					
Area (in²):	4.909	4.909	4.909					
Volume (in³):	4.9087	4.9087	4.9087					
Moisture (%):	35.1	28.3	36.6					
Dry Density (pcf):	84.4	91.1	79.5					
Wet Density (pcf):	113.9	116.9	108.6					
Saturation (%):	96.7	92.0	89.8					
Void Ratio:	0.961	0.816	1.081					
Porosity (%):	49.0	44.9	51.9					
Consolidation Parameters	1	2	3	4	5	6	7	8
Initial Reference Height (in):	1.0000	1.0000	1.0000					
Final Reference Height (in):	0.9408	0.9768	0.8400					
Height (in):	0.9408	0.9768	0.8400					
Final Parameters	1	2	3	4	5	6	7	8
Moisture Content (%)	41.0	35.7	40.0					
Dry Density (pcf):	86.6	90.7	86.6					
Wet Density (pcf):	122.1	123.1	121.2					
Saturation (%):	119.3	114.9	116.4					
Void Ratio:	0.911	0.823	0.910					
Porosity (%):	47.7	45.2	47.6					

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540



Direct Shear Test

ASTM D3080

Specimen 1

Test Description: Peak Direct Shear Test
Other Associated Tests: LL,PSD,MC
Device Details: HM 5750D DS-6
Test Specification: ASTM D3080
Test Time: 8/14/2025
Technician: Htran
Specimen Code: _
Specimen Description: Sandy Silt Yellowish Brown
Specific Gravity: 2.65
Plastic Limit: NP
Test Remarks:

Sampling Method: Undisturbed
Specimen Lab #: 1735-2
Liquid Limit: NP

Specimen 2

Test Description: Peak Direct Shear Test
Other Associated Tests: LL,PSD,MC
Device Details: HM 5750D DS-7
Test Specification: ASTM D3080
Test Time: 8/14/2025
Technician: Htran
Specimen Code: _
Specimen Description: Sandy Silt Yellowish Brown
Specific Gravity: 2.65
Plastic Limit: NP
Test Remarks:

Sampling Method: Undisturbed
Specimen Lab #: 1735-2
Liquid Limit: NP



Direct Shear Test

ASTM D3080

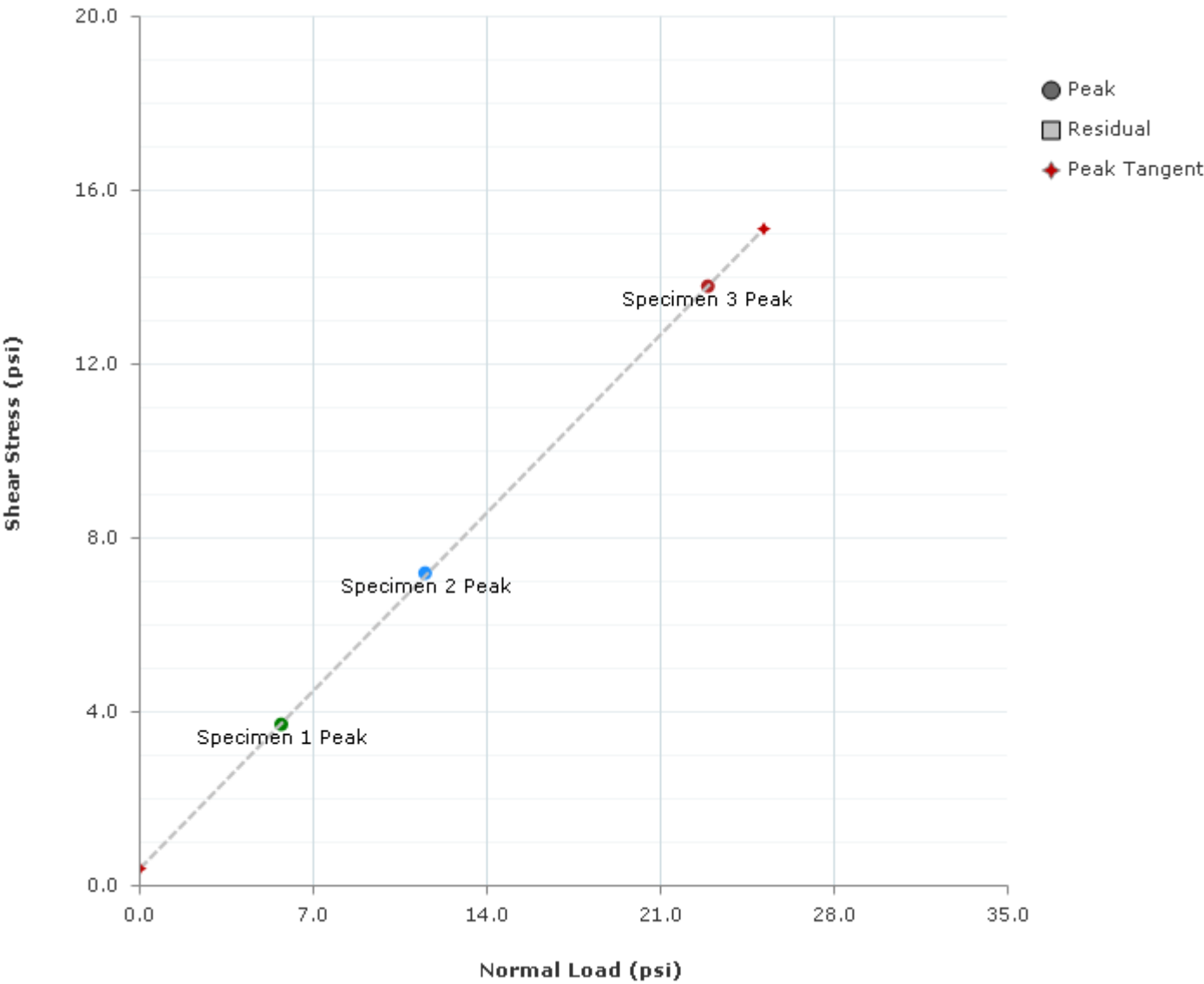
Specimen 3

Test Description:	Peak Direct Shear Test	
Other Associated Tests:	LL,PSD,MC	
Device Details:	HM 5750D DS-7	
Test Specification:	ASTM D3080	
Test Time:	8/14/2025	
Technician:	Htran	Sampling Method: Undisturbed
Specimen Code:	_	Specimen Lab #: 1735-2
Specimen Description:	Sandy Silt Yellowish Brown	
Specific Gravity:	2.65	
Plastic Limit:	NP	Liquid Limit: NP
Test Remarks:		



Direct Shear Test - Shear Stress Vs. Normal Stress

ASTM D3080

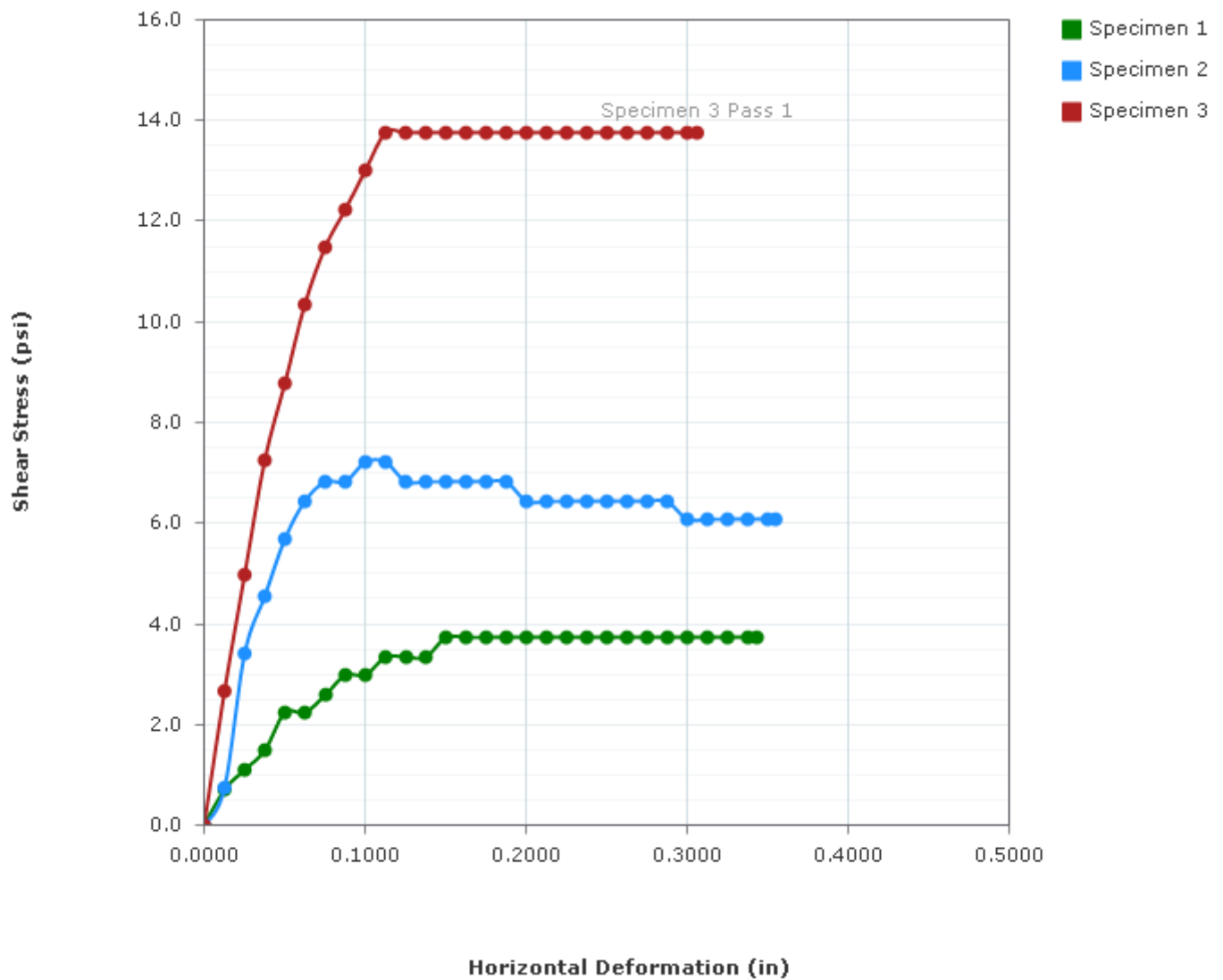


Normal Load (psi)		
Tangent Results		
Peak Tangent:	C (psi)	Phi (°)
Residual Tangent:	NA	NA



Graph - Stress Deformation

ASTM D3080



Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Consol Test - Specimen 1 - Sequence 1 - 0.412 (tsf)

ASTM D3080

LIMS Code: [TO COME FROM LIMS] LIMS Specimen Code: [TO COME FROM LIMS]

Index	Elapsed Time (hh:mm:ss)	Load (Lbf)	Load (Lbf)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.0	0.5135	0.0000	0.0	0.96
1	00:00:06	0.0	0.4725	0.0410	4.1	0.88
2	00:00:15	0.0	0.4621	0.0514	5.1	0.86
3	00:00:30	0.0	0.4584	0.0551	5.5	0.85
4	00:01:00	0.0	0.4570	0.0565	5.6	0.85
5	00:02:00	0.0	0.4562	0.0573	5.7	0.85
6	00:04:00	0.0	0.4557	0.0578	5.8	0.84
7	00:08:00	0.0	0.4552	0.0583	5.8	0.84
8	00:15:00	0.0	0.4549	0.0586	5.9	0.84
9	00:30:00	0.0	0.4545	0.0590	5.9	0.84
10	00:41:31	0.0	0.4543	0.0592	5.9	0.84

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Technician: Htran

Test Date: 8/13/2025

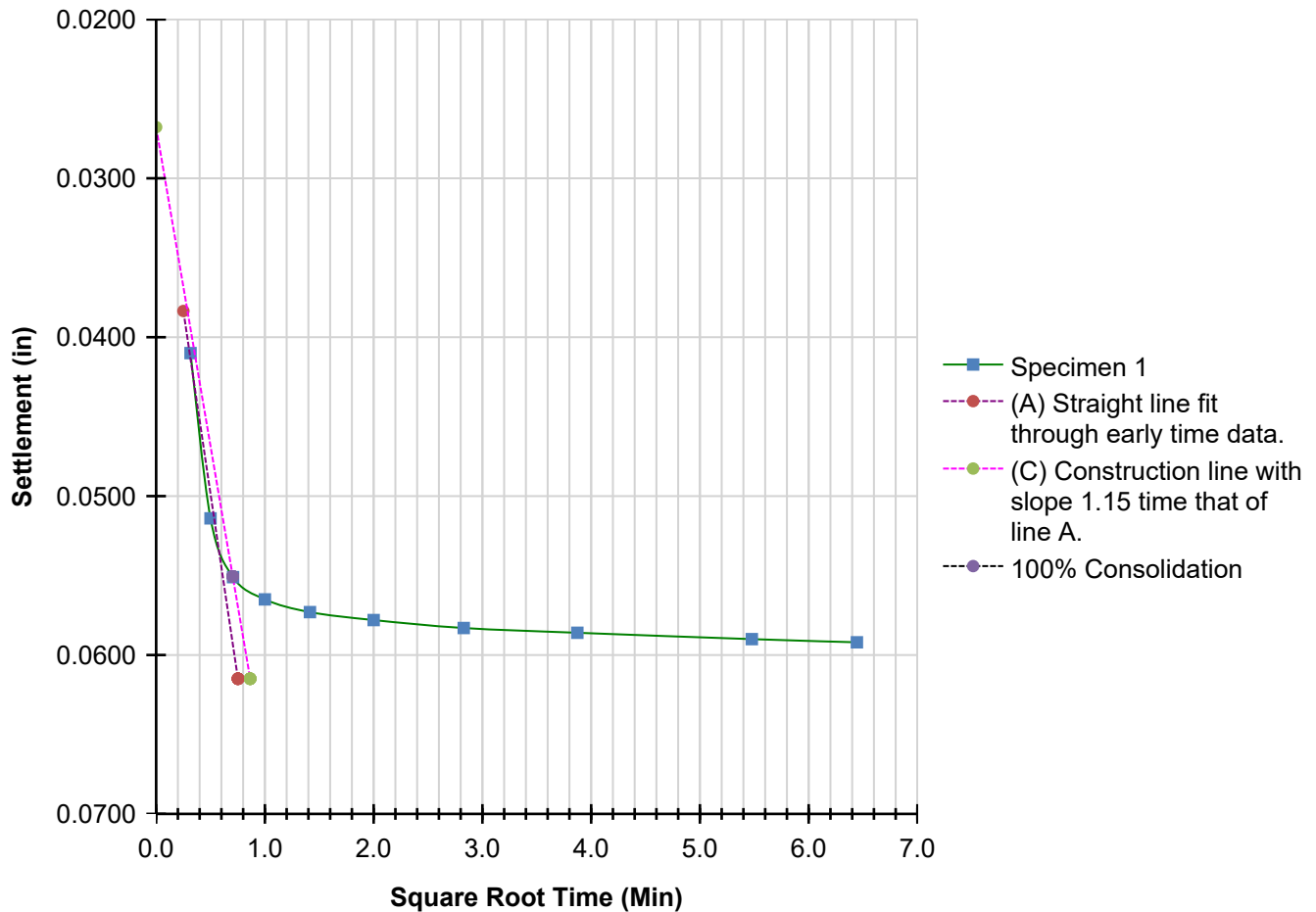
Report Created: 8/18/2025

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Square Root Time - Specimen 1 - Sequence 1 - 0.412 (tsf)

ASTM D3080



Tangent Construction Results

T90 (Min):	0.496
T50 (Min):	0.115
Cv (in ² /Min):	0.37819

Consol Test - Specimen 2 - Sequence 1 - 0.825 (tsf)

ASTM D3080

LIMS Code: [TO COME FROM LIMS] LIMS Specimen Code: [TO COME FROM LIMS]

Index	Elapsed Time (hh:mm:ss)	Load (Lbf)	Load (Lbf)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.0	0.5421	0.0000	0.0	0.82
1	00:00:06	0.0	0.5047	0.0000	0.0	0.81
2	00:00:15	0.0	0.4859	0.0188	1.9	0.78
3	00:00:30	0.0	0.4838	0.0209	2.1	0.77
4	00:01:00	0.0	0.4831	0.0216	2.2	0.77
5	00:02:00	0.0	0.4828	0.0219	2.2	0.77
6	00:04:00	0.0	0.4824	0.0223	2.2	0.77
7	00:08:00	0.0	0.4822	0.0225	2.2	0.77
8	00:15:00	0.0	0.4820	0.0227	2.3	0.77
9	00:30:00	0.0	0.4816	0.0231	2.3	0.77
10	00:39:04	0.0	0.4815	0.0232	2.3	0.77

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Technician: Htran

Test Date: 8/13/2025

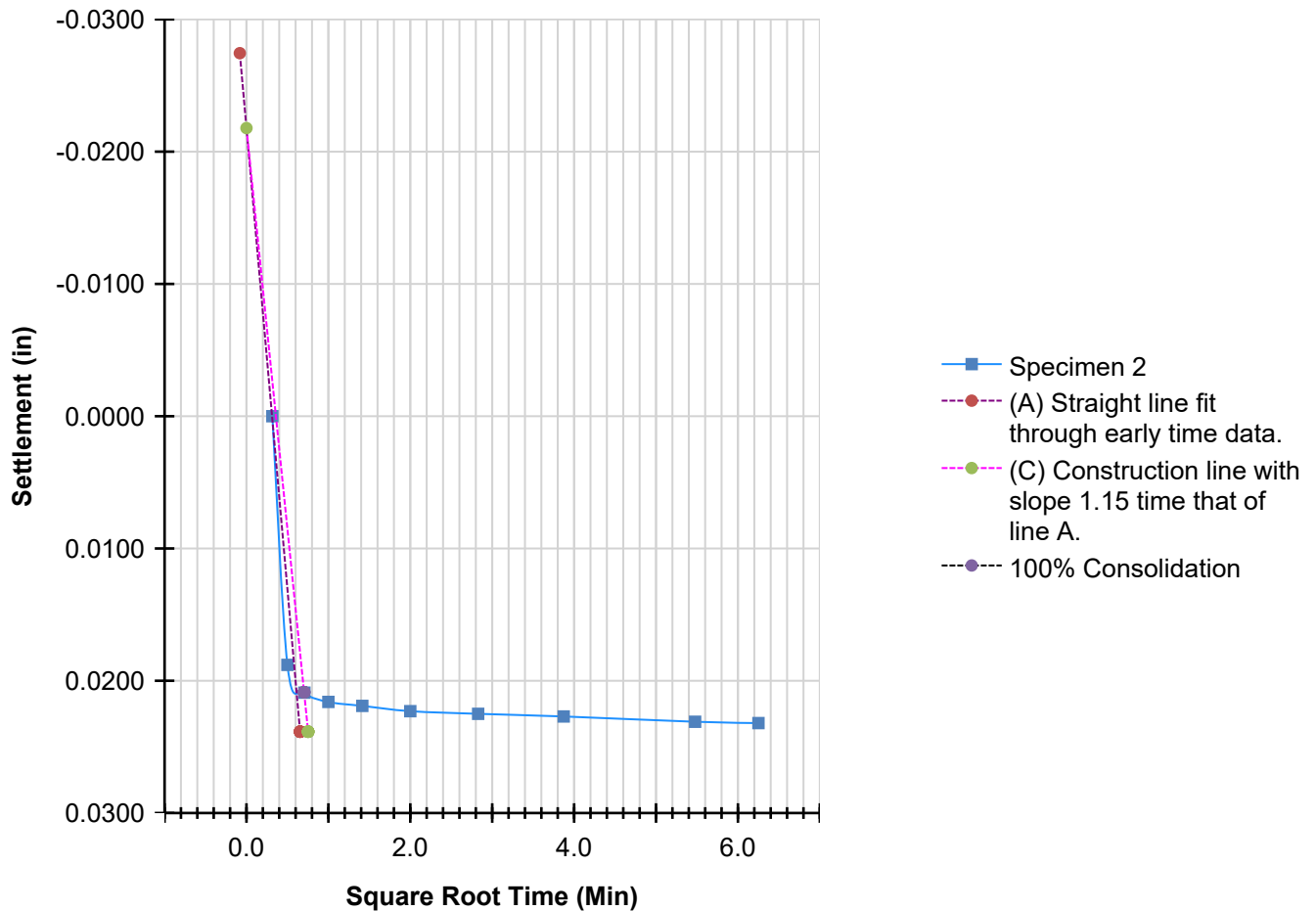
Report Created: 8/18/2025

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Square Root Time - Specimen 2 - Sequence 1 - 0.825 (tsf)

ASTM D3080



Tangent Construction Results

T90 (Min):	0.495
T50 (Min):	0.111
Cv (in ² /Min):	0.40875

Consol Test - Specimen 3 - Sequence 1 - 1.650 (tsf)

ASTM D3080

LIMS Code: [TO COME FROM LIMS] LIMS Specimen Code: [TO COME FROM LIMS]

Index	Elapsed Time (hh:mm:ss)	Load (Lbf)	Load (Lbf)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.0	0.6258	0.0000	0.0	1.08
1	00:00:06	0.0	0.6074	0.0184	1.8	1.04
2	00:00:15	0.0	0.5756	0.0502	5.0	0.97
3	00:00:30	0.0	0.4873	0.1385	13.9	0.79
4	00:01:00	0.0	0.4706	0.1552	15.5	0.75
5	00:02:00	0.0	0.4680	0.1578	15.8	0.75
6	00:04:00	0.0	0.4672	0.1586	15.9	0.75
7	00:08:00	0.0	0.4667	0.1591	15.9	0.75
8	00:15:00	0.0	0.4663	0.1595	16.0	0.75
9	00:30:00	0.0	0.4659	0.1599	16.0	0.75
10	00:33:09	0.0	0.4658	0.1600	16.0	0.74

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Technician: Htran

Test Date: 8/13/2025

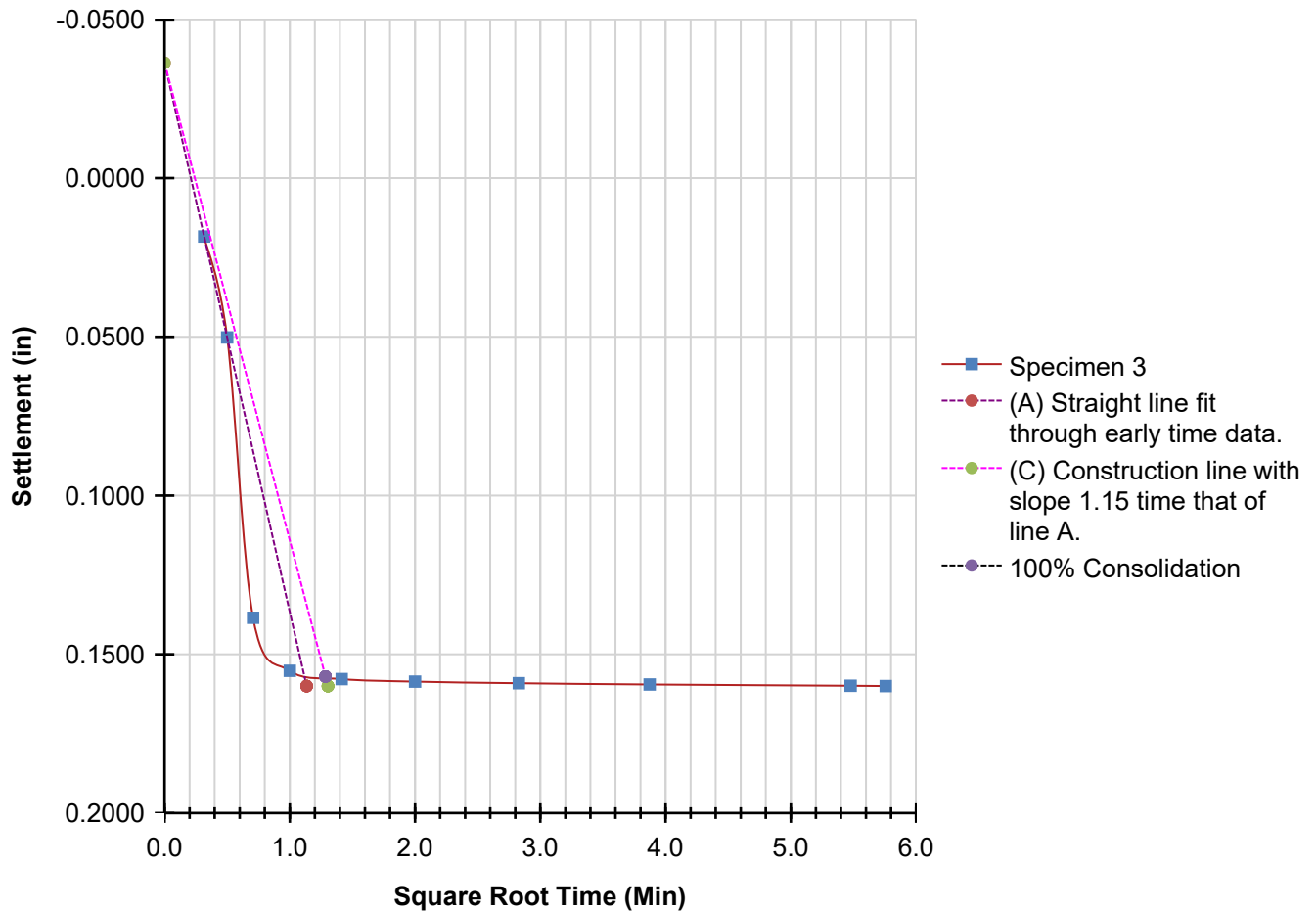
Report Created: 8/18/2025

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Square Root Time - Specimen 3 - Sequence 1 - 1.650 (tsf)

ASTM D3080



Tangent Construction Results

T90 (Min):	1.650
T50 (Min):	0.301
Cv (in ² /Min):	0.09063



Direct Shear Test

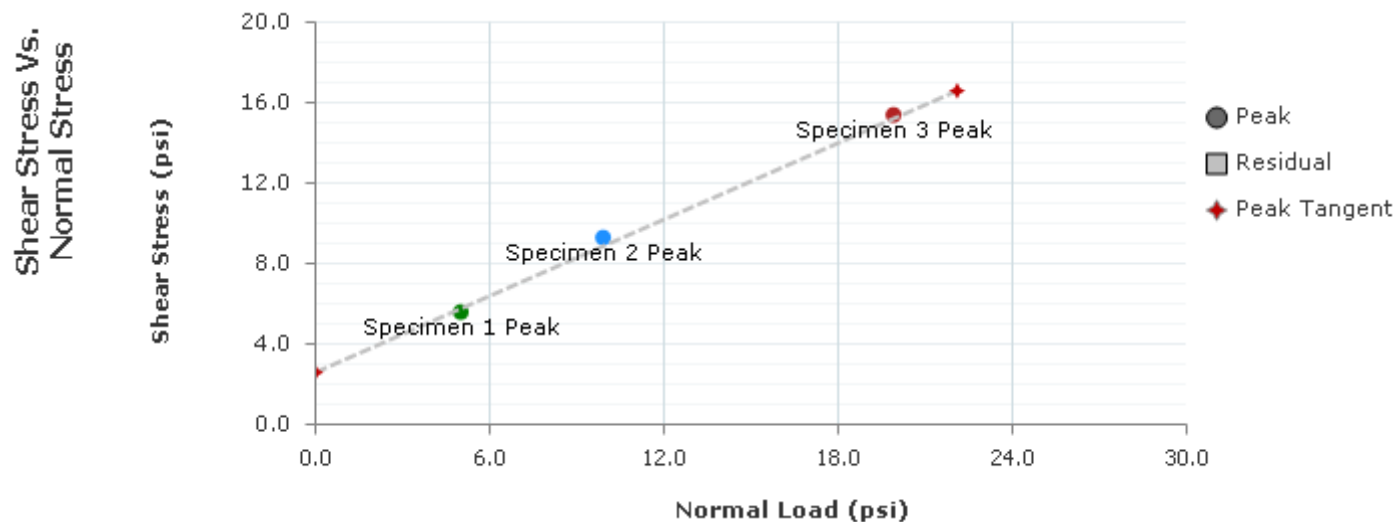
ASTM D3080

Project: Appomattox Business Center - Preliminary

Project Number: 12 20540

Location: SWM-02A

Client Name: Kimley-Horn and Associates, Inc.



C (psi): 2.6

Residual C (psi): NA

Phi (°): 32.5

Residual Phi (°): NA

	Specimen Number							
Initial	1	2	3	4	5	6	7	8
Moisture (%):	38.3	42.1	44.7					
Dry Density (pcf):	78.9	74.5	71.7					
Void Ratio:	1.096	1.221	1.306					
Saturation (%):	92.4	91.5	90.8					
Diameter (in):	2.5000	2.5000	2.5000					
Height (in):	1.0000	1.0000	1.0000					
Final	1	2	3	4	5	6	7	8
Moisture (%):	45.3	49.7	49.7					
Dry Density (pcf):	81.1	76.4	75.3					
Void Ratio:	1.039	1.167	1.198					
Saturation (%):	115.4	113.0	109.9					
Height (in):	0.9813	0.9879	0.9711					
Normal Stress (psi):	5.0	9.9	19.9					
Peak Shear Stress (psi):	5.6	9.3	15.4					
Residual Stress (psi):	NA	NA	NA					
Horizontal Deformation (%):	2.5	2.5	4.0					
Rate (in/min):	0.000347	0.000347	0.000347					

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Checked By: Mehmet Uzun Approved By: Scott Nelson Date: 8/19/2025



Direct Shear Test

ASTM D3080

Project: Appomattox Business Center - Preliminary

Project Number: 12 20540

Sampling Date: 8/14/2025

Sample Number: ST-01

Sample Depth: 13.0-15.0 ft

Location: SWM-02A

Client Name: Kimley-Horn and Associates, Inc.

Remarks:

Information Parameters	1	2	3	4	5	6	7	8
Liquid Limit:	64	64	64					
Plastic Limit:	37	37	37					
Specific Gravity:	2.65	2.65	2.65					
Specific Gravity Method:	ASSUMED	ASSUMED	ASSUMED					
Initial Parameters	1	2	3	4	5	6	7	8
Test Temperature (°C):	23.0	23.0	23.0					
Sample Shape:	ROUND	ROUND	ROUND					
Height (in):	1.0000	1.0000	1.0000					
Diameter (in):	2.5000	2.5000	2.5000					
Area (in²):	4.909	4.909	4.909					
Volume (in³):	4.9087	4.9087	4.9087					
Moisture (%):	38.3	42.1	44.7					
Dry Density (pcf):	78.9	74.5	71.7					
Wet Density (pcf):	109.1	105.9	103.9					
Saturation (%):	92.4	91.5	90.8					
Void Ratio:	1.096	1.221	1.306					
Porosity (%):	52.3	55.0	56.6					
Consolidation Parameters	1	2	3	4	5	6	7	8
Initial Reference Height (in):	1.0000	1.0000	1.0000					
Final Reference Height (in):	0.9813	0.9879	0.9711					
Height (in):	0.9813	0.9879	0.9711					
Final Parameters	1	2	3	4	5	6	7	8
Moisture Content (%)	45.3	49.7	49.7					
Dry Density (pcf):	81.1	76.4	75.3					
Wet Density (pcf):	117.8	114.3	112.7					
Saturation (%):	115.4	113.0	109.9					
Void Ratio:	1.039	1.167	1.198					
Porosity (%):	51.0	53.8	54.5					

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540



Direct Shear Test

ASTM D3080

Specimen 1

Test Description: Peak Direct Shear Test
Other Associated Tests: LL,PSD,MC
Device Details: HM 5750D DS-3
Test Specification: ASTM D3080
Test Time: 8/15/2025
Technician: Htran
Specimen Code: _
Specimen Description: Elastic Silt with Sand Yellowish Brown
Specific Gravity: 2.65
Plastic Limit: 37
Test Remarks:

Sampling Method: Undisturbed
Specimen Lab #: 1735-3
Liquid Limit: 64

Specimen 2

Test Description: Peak Direct Shear Test
Other Associated Tests: LL,PSD,MC
Device Details: HM 5750D DS-4
Test Specification: ASTM D3080
Test Time: 8/15/2025
Technician: Htran
Specimen Code: _
Specimen Description: Elastic Silt with Sand Yellowish Brown
Specific Gravity: 2.65
Plastic Limit: 37
Test Remarks:

Sampling Method: Undisturbed
Specimen Lab #: 1735-3
Liquid Limit: 64



Direct Shear Test

ASTM D3080

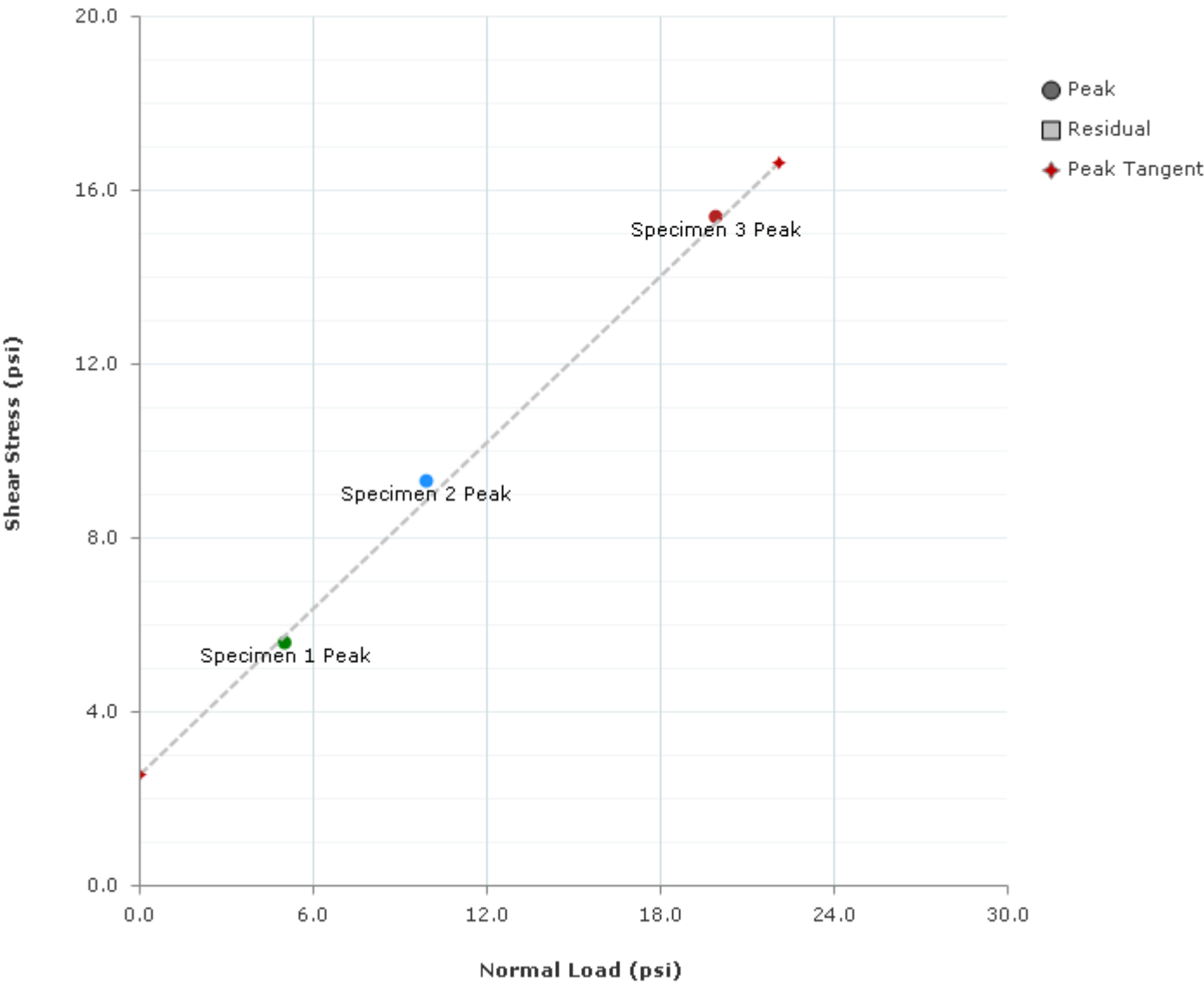
Specimen 3

Test Description:	Peak Direct Shear Test	
Other Associated Tests:	LL,PSD,MC	
Device Details:	HM 5750D DS-5	
Test Specification:	ASTM D3080	
Test Time:	8/15/2025	
Technician:	Htran	Sampling Method: Undisturbed
Specimen Code:	_	Specimen Lab #: 1735-3
Specimen Description:	Elastic Silt with Sand Yellowish Brown	
Specific Gravity:	2.65	
Plastic Limit:	37	Liquid Limit: 64
Test Remarks:		



Direct Shear Test - Shear Stress Vs. Normal Stress

ASTM D3080

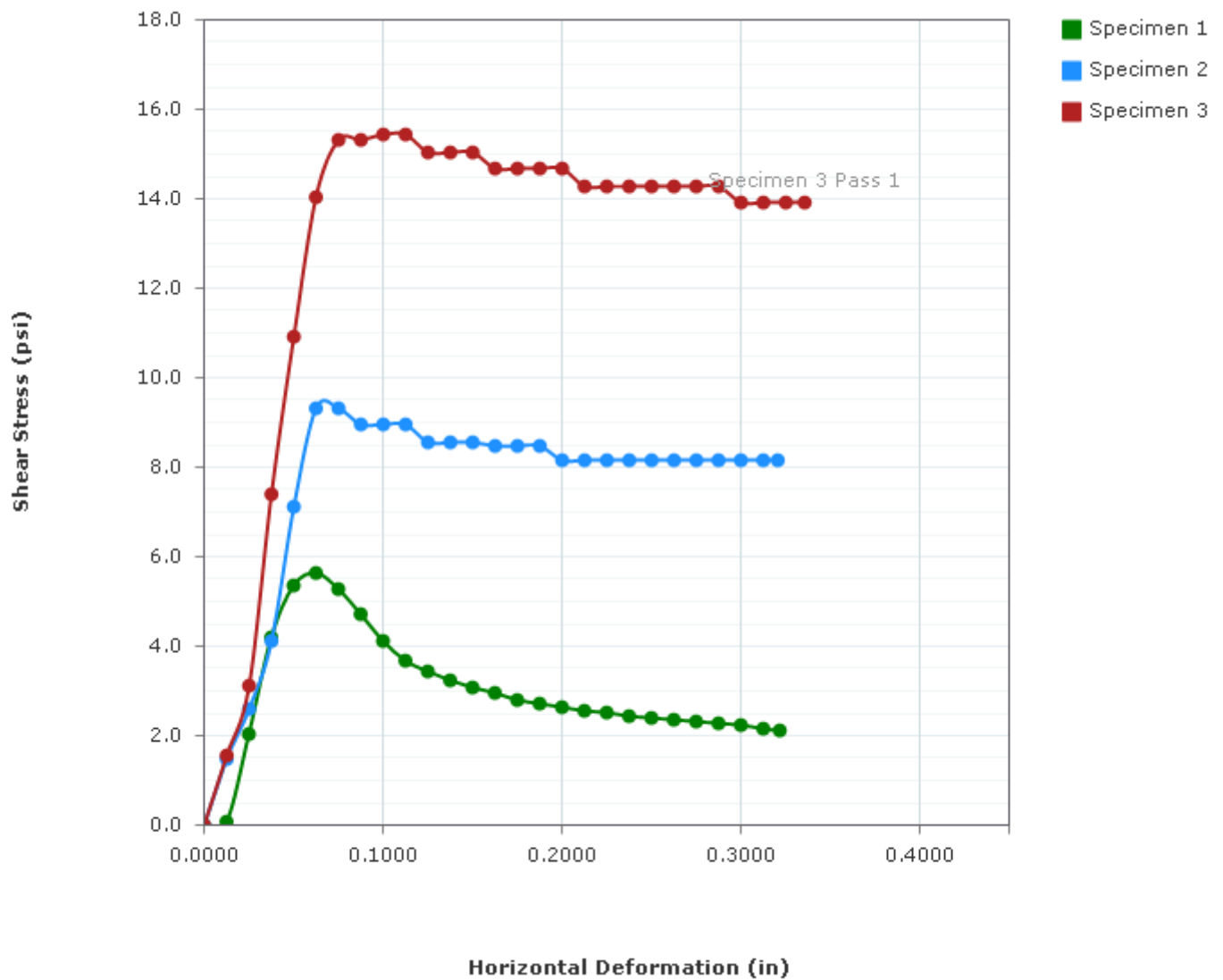


Normal Load (psi)		
Tangent Results		Phi (°)
Peak Tangent:		32.5
Residual Tangent:		NA



Graph - Stress Deformation

ASTM D3080



Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Consol Test - Specimen 1 - Sequence 1 - 0.358 (tsf)

ASTM D3080

LIMS Code: [TO COME FROM LIMS] LIMS Specimen Code: [TO COME FROM LIMS]

Index	Elapsed Time (hh:mm:ss)	Load (Lbf)	Load (Lbf)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.0	0.1951	0.0000	0.0	1.10
1	00:00:06	0.0	0.1833	0.0118	1.2	1.07
2	00:00:15	0.0	0.1781	0.0170	1.7	1.06
3	00:00:30	0.0	0.1778	0.0173	1.7	1.06
4	00:01:00	0.0	0.1776	0.0175	1.8	1.06
5	00:02:00	0.0	0.1774	0.0177	1.8	1.06
6	00:04:00	0.0	0.1772	0.0179	1.8	1.06
7	00:08:00	0.0	0.1770	0.0181	1.8	1.05
8	00:15:00	0.0	0.1769	0.0182	1.8	1.05
9	00:30:00	0.0	0.1768	0.0183	1.8	1.05
10	01:00:00	0.0	0.1766	0.0185	1.8	1.05
11	02:00:00	0.0	0.1765	0.0186	1.9	1.05
12	02:53:37	0.0	0.1764	0.0187	1.9	1.05

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Technician: Htran

Test Date: 8/14/2025

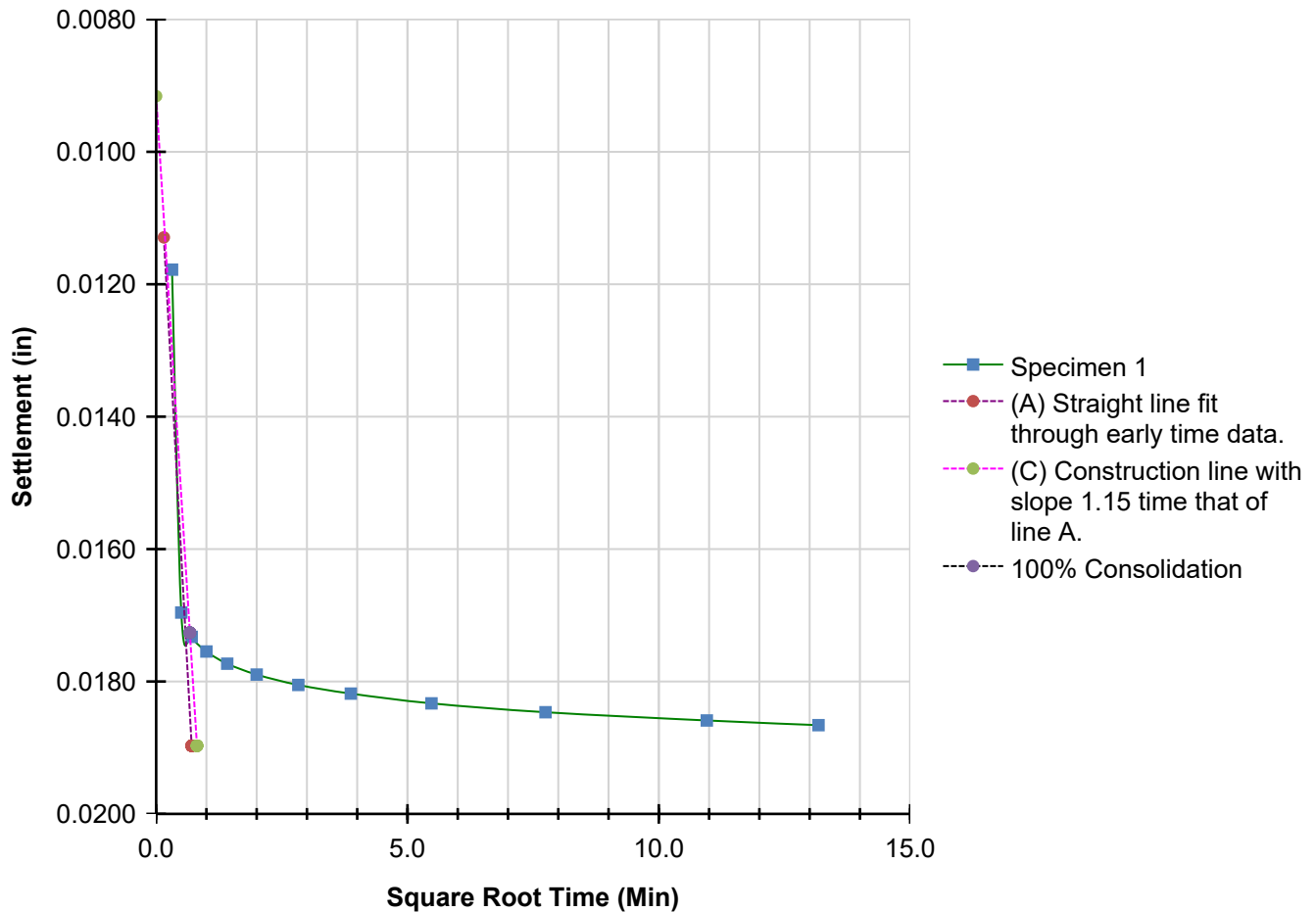
Report Created: 8/18/2025

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Square Root Time - Specimen 1 - Sequence 1 - 0.358 (tsf)

ASTM D3080



Tangent Construction Results

T90 (Min):	0.450
T50 (Min):	0.148
Cv (in ² /Min):	0.45380

Consol Test - Specimen 2 - Sequence 1 - 0.715 (tsf)

ASTM D3080

LIMS Code: [TO COME FROM LIMS] LIMS Specimen Code: [TO COME FROM LIMS]

Index	Elapsed Time (hh:mm:ss)	Load (Lbf)	Load (Lbf)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.0	0.7088	0.0000	0.0	1.22
1	00:00:06	0.0	0.7001	0.0000	0.0	1.22
2	00:00:15	0.0	0.6898	0.0103	1.0	1.19
3	00:00:30	0.0	0.6894	0.0107	1.1	1.19
4	00:01:00	0.0	0.6892	0.0109	1.1	1.19
5	00:02:00	0.0	0.6890	0.0111	1.1	1.19
6	00:04:00	0.0	0.6888	0.0113	1.1	1.19
7	00:08:00	0.0	0.6886	0.0115	1.2	1.19
8	00:15:00	0.0	0.6885	0.0116	1.2	1.19
9	00:30:00	0.0	0.6883	0.0118	1.2	1.19
10	01:00:00	0.0	0.6882	0.0119	1.2	1.19
11	02:00:00	0.0	0.6881	0.0120	1.2	1.19
12	02:48:53	0.0	0.6880	0.0121	1.2	1.19

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Technician: Htran

Test Date: 8/14/2025

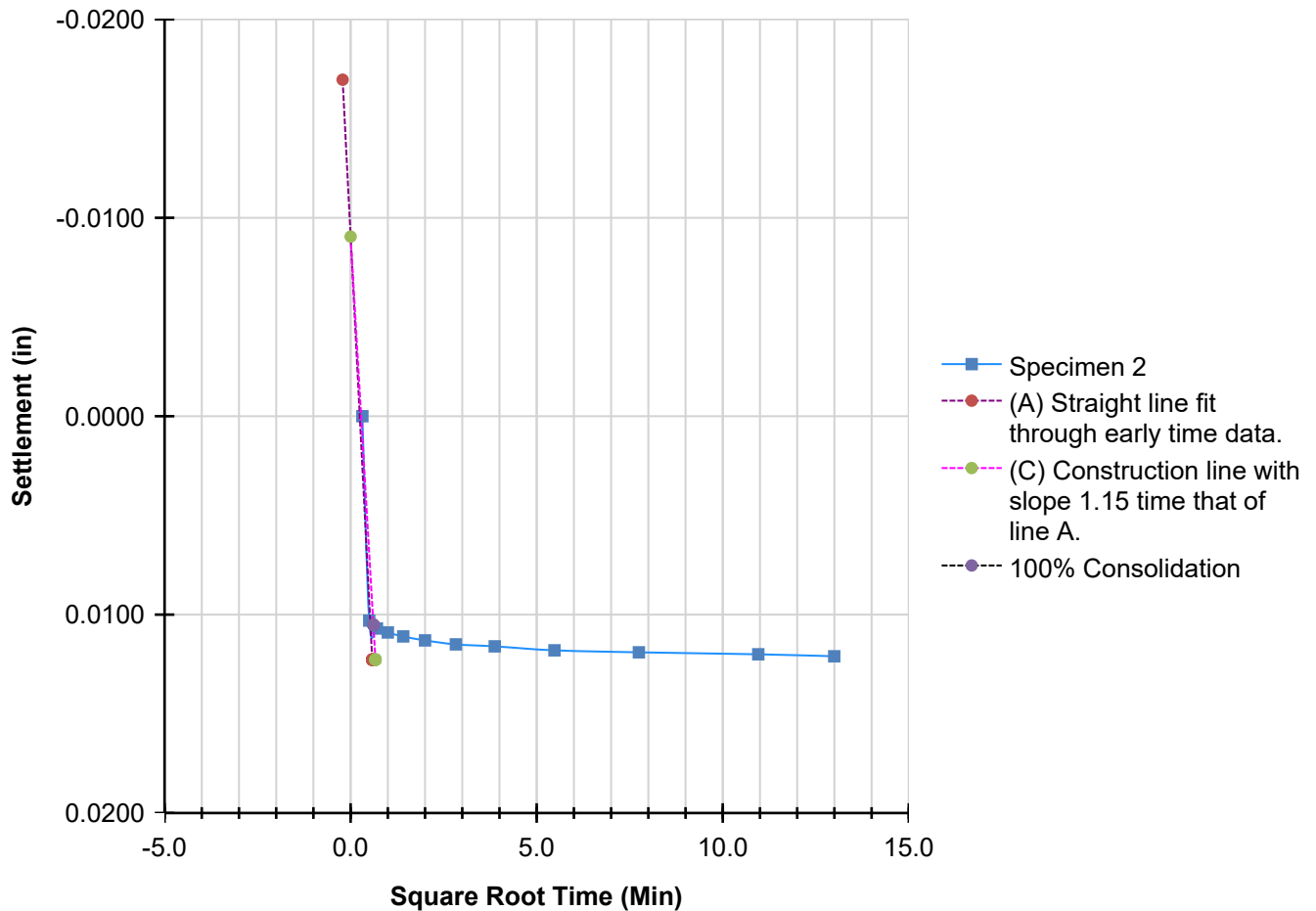
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Square Root Time - Specimen 2 - Sequence 1 - 0.715 (tsf)

ASTM D3080



Tangent Construction Results

T90 (Min):	0.374
T50 (Min):	0.122
Cv (in ² /Min):	0.55277

Consol Test - Specimen 3 - Sequence 1 - 1.430 (tsf)

ASTM D3080

LIMS Code: [TO COME FROM LIMS] LIMS Specimen Code: [TO COME FROM LIMS]

Index	Elapsed Time (hh:mm:ss)	Load (Lbf)	Load (Lbf)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.0	0.5959	0.0000	0.0	1.31
1	00:00:06	0.0	0.5693	0.0266	2.7	1.24
2	00:00:15	0.0	0.5688	0.0271	2.7	1.24
3	00:00:30	0.0	0.5685	0.0274	2.7	1.24
4	00:01:00	0.0	0.5683	0.0276	2.8	1.24
5	00:02:00	0.0	0.5681	0.0278	2.8	1.24
6	00:04:00	0.0	0.5679	0.0280	2.8	1.24
7	00:08:00	0.0	0.5677	0.0282	2.8	1.24
8	00:15:00	0.0	0.5676	0.0283	2.8	1.24
9	00:30:00	0.0	0.5674	0.0285	2.9	1.24
10	01:00:00	0.0	0.5673	0.0286	2.9	1.24
11	02:00:00	0.0	0.5671	0.0288	2.9	1.24
12	02:48:16	0.0	0.5670	0.0289	2.9	1.24

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Technician: Htran

Test Date: 8/14/2025

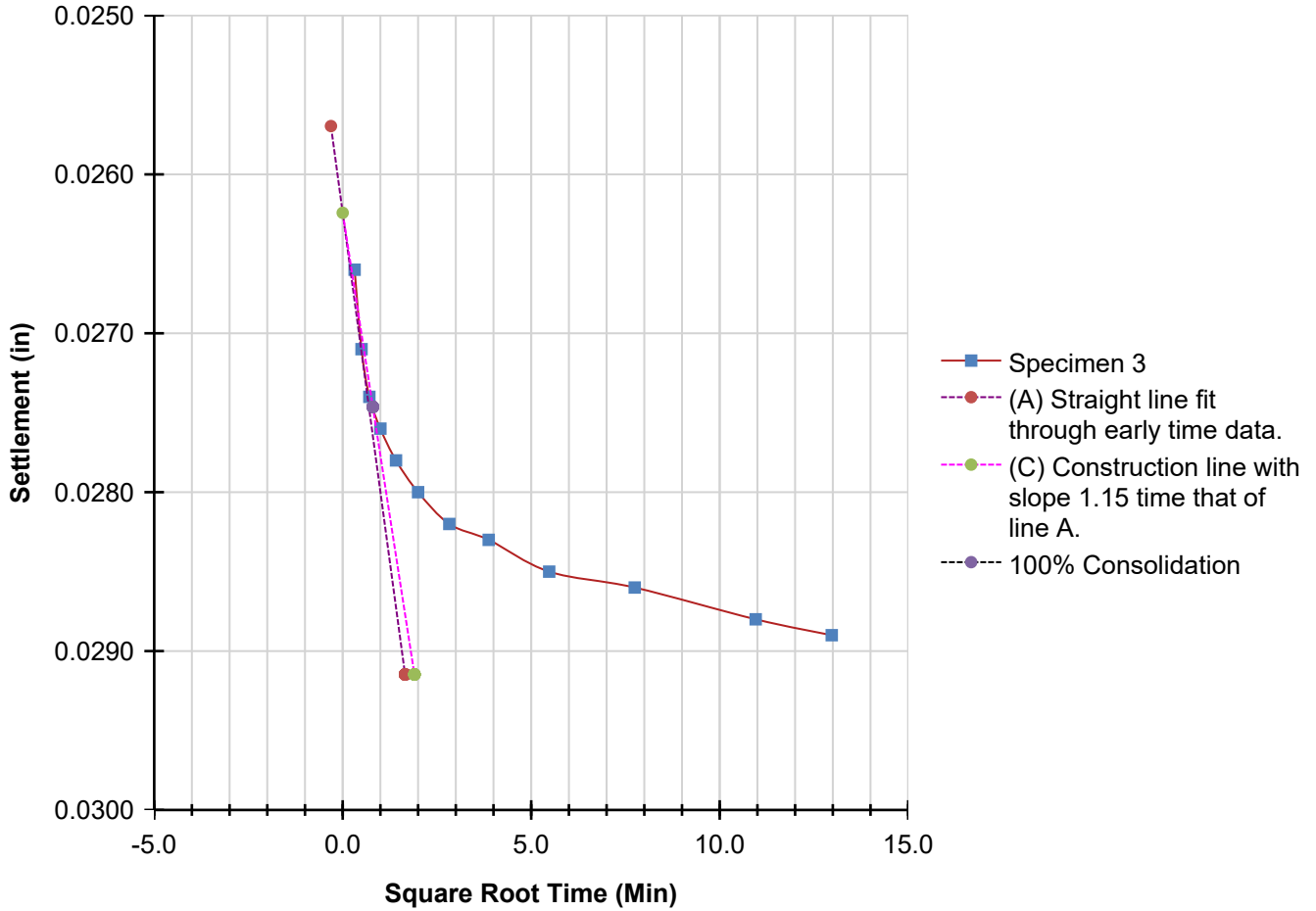
Report Created: 8/18/2025

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Square Root Time - Specimen 3 - Sequence 1 - 1.430 (tsf)

ASTM D3080



Tangent Construction Results

T90 (Min):	0.640
T50 (Min):	0.189
Cv (in ² /Min):	0.31235



Direct Shear Test

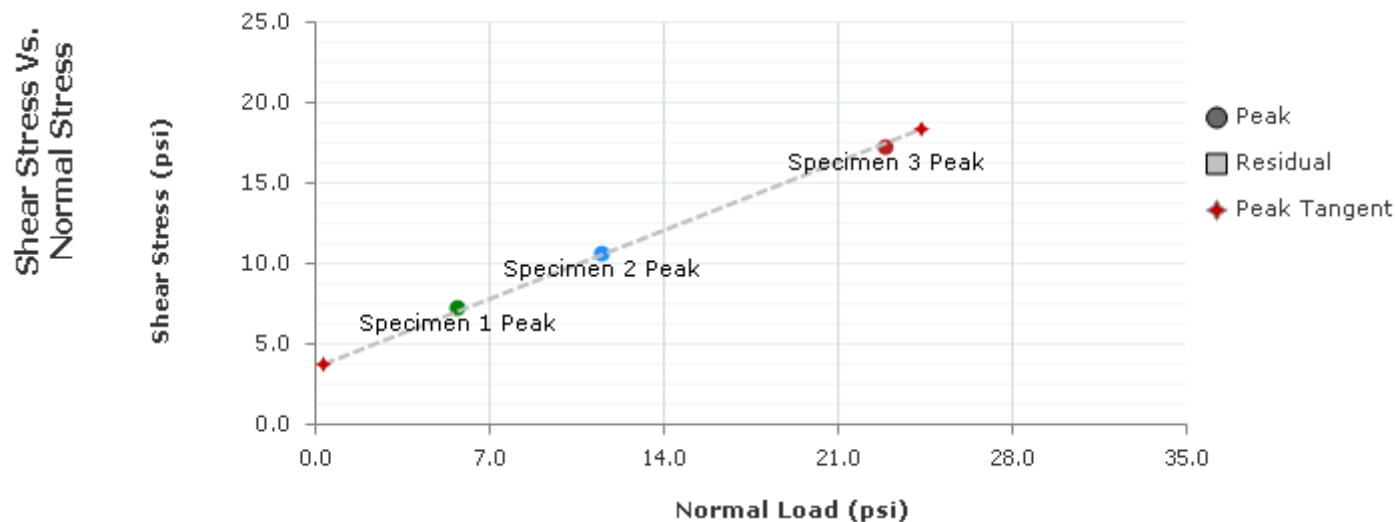
ASTM D3080

Project: Appomattox Business Center - Preliminary

Project Number: 12 20540

Location: SWM-10

Client Name: Kimley-Horn and Associates, Inc.



C (psi): 3.5

Residual C (psi): NA

Phi (°): 31.4

Residual Phi (°): NA

	Specimen Number							
Initial	1	2	3	4	5	6	7	8
Moisture (%):	36.6	35.6	37.0					
Dry Density (pcf):	78.4	79.2	78.4					
Void Ratio:	1.111	1.088	1.109					
Saturation (%):	87.4	86.7	88.3					
Diameter (in):	2.5000	2.5000	2.5000					
Height (in):	1.0000	1.0000	1.0000					
Final	1	2	3	4	5	6	7	8
Moisture (%):	41.7	41.6	40.2					
Dry Density (pcf):	77.7	77.6	79.4					
Void Ratio:	1.130	1.131	1.085					
Saturation (%):	97.8	97.5	98.1					
Height (in):	0.9954	0.9967	0.9683					
Normal Stress (psi):	5.7	11.5	22.9					
Peak Shear Stress (psi):	7.2	10.6	17.2					
Residual Stress (psi):	NA	NA	NA					
Horizontal Deformation (%):	6.0	3.5	6.5					
Rate (in/min):	0.000347	0.000347	0.000347					

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Checked By: Mehmet Uzun

Approved By: Scott Nelson

Date: 8/19/2025



Direct Shear Test

ASTM D3080

Project: Appomattox Business Center - Preliminary

Project Number: 12 20540

Sampling Date: 8/15/2025

Sample Number: ST-01

Sample Depth: 15.0-17.0 ft

Location: SWM-10

Client Name: Kimley-Horn and Associates, Inc.

Remarks:

Information Parameters	1	2	3	4	5	6	7	8
Liquid Limit:	36	36	36					
Plastic Limit:	26	26	26					
Specific Gravity:	2.65	2.65	2.65					
Specific Gravity Method:	ASSUMED	ASSUMED	ASSUMED					
Initial Parameters	1	2	3	4	5	6	7	8
Test Temperature (°C):	23.0	23.0	23.0					
Sample Shape:	ROUND	ROUND	ROUND					
Height (in):	1.0000	1.0000	1.0000					
Diameter (in):	2.5000	2.5000	2.5000					
Area (in²):	4.909	4.909	4.909					
Volume (in³):	4.9087	4.9087	4.9087					
Moisture (%):	36.6	35.6	37.0					
Dry Density (pcf):	78.4	79.2	78.4					
Wet Density (pcf):	107.1	107.4	107.4					
Saturation (%):	87.4	86.7	88.3					
Void Ratio:	1.111	1.088	1.109					
Porosity (%):	52.6	52.1	52.6					
Consolidation Parameters	1	2	3	4	5	6	7	8
Initial Reference Height (in):	1.0000	1.0000	1.0000					
Final Reference Height (in):	0.9954	0.9967	0.9683					
Height (in):	0.9954	0.9967	0.9683					
Final Parameters	1	2	3	4	5	6	7	8
Moisture Content (%)	41.7	41.6	40.2					
Dry Density (pcf):	77.7	77.6	79.4					
Wet Density (pcf):	110.1	109.9	111.2					
Saturation (%):	97.8	97.5	98.1					
Void Ratio:	1.130	1.131	1.085					
Porosity (%):	53.0	53.1	52.0					

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540



Direct Shear Test

ASTM D3080

Specimen 1

Test Description: Peak Direct Shear Test
Other Associated Tests: LL,PSD,MC,Consolidation
Device Details: HM 5750D DS-3
Test Specification: ASTM D3080
Test Time: 8/18/2025
Technician: Htran
Specimen Code:
Specimen Description: Sandy Silt Yellowish Brown
Specific Gravity: 2.65
Plastic Limit: 26
Test Remarks:

Sampling Method: Undisturbed
Specimen Lab #: 1735-4
Liquid Limit: 36

Specimen 2

Test Description: Peak Direct Shear Test
Other Associated Tests: LL,PSD,MC,Consolidation
Device Details: HM 5750D DS-4
Test Specification: ASTM D3080
Test Time: 8/18/2025
Technician: Htran
Specimen Code:
Specimen Description: Sandy Silt Yellowish Brown
Specific Gravity: 2.65
Plastic Limit: 26
Test Remarks:

Sampling Method: Undisturbed
Specimen Lab #: 1735-4
Liquid Limit: 36



Direct Shear Test

ASTM D3080

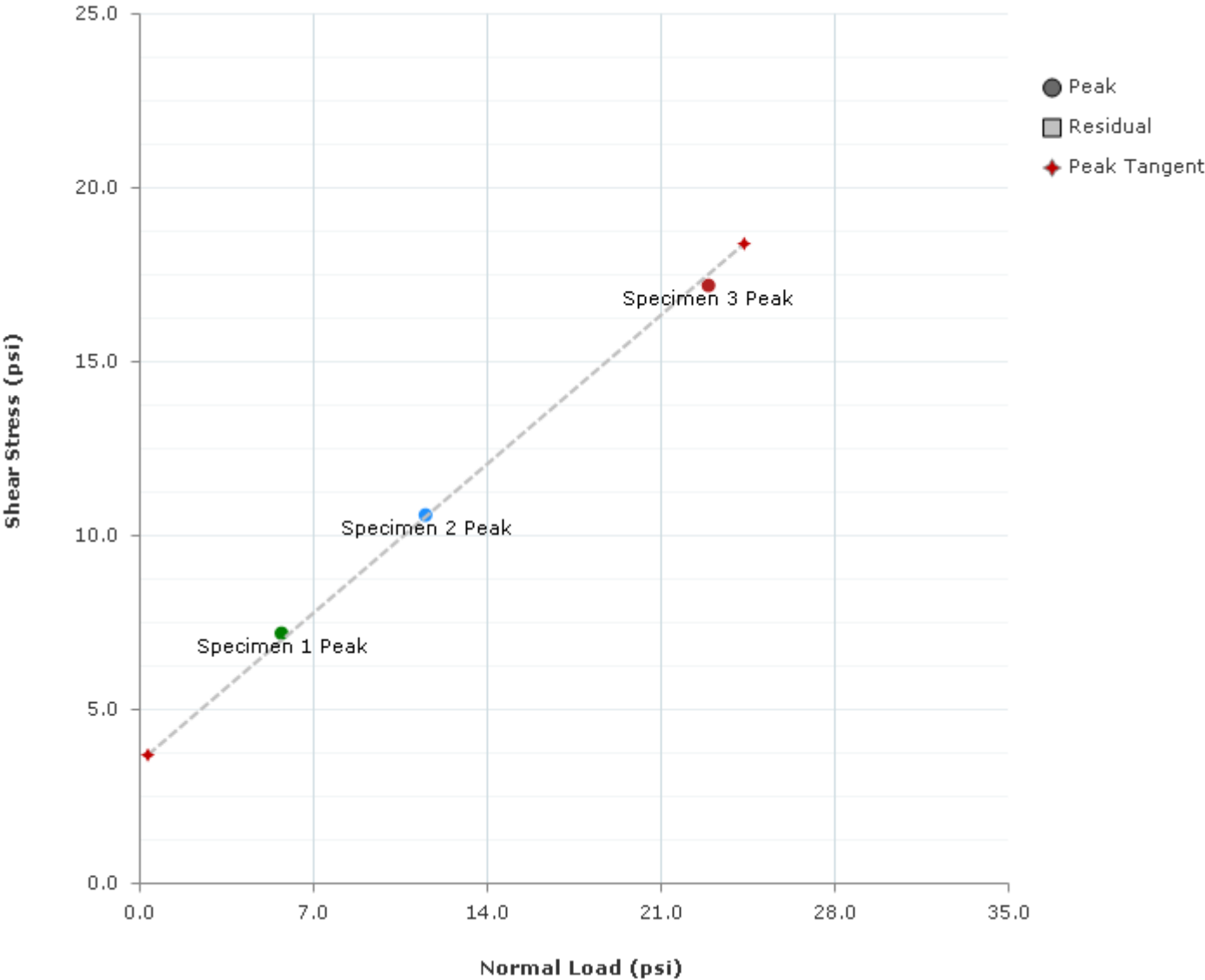
Specimen 3

Test Description:	Peak Direct Shear Test	
Other Associated Tests:	LL,PSD,MC,Consolidation	
Device Details:	HM 5750D DS-5	
Test Specification:	ASTM D3080	
Test Time:	8/18/2025	
Technician:	Htran	Sampling Method: Undisturbed
Specimen Code:		Specimen Lab #: 1735-4
Specimen Description:	Sandy Silt Yellowish Brown	
Specific Gravity:	2.65	
Plastic Limit:	26	Liquid Limit: 36
Test Remarks:		



Direct Shear Test - Shear Stress Vs. Normal Stress

ASTM D3080

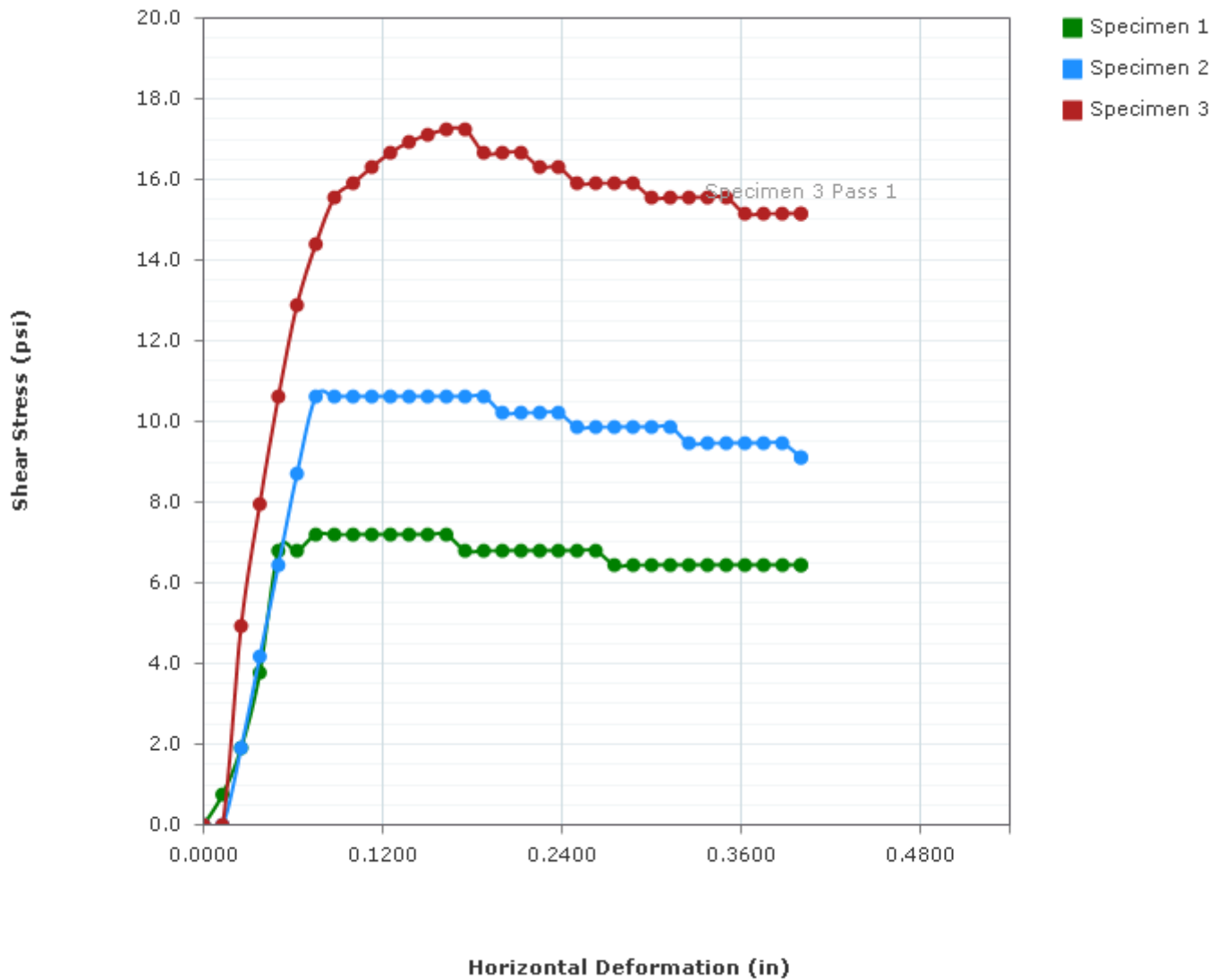


Tangent Results		
Peak Tangent:	C (psi)	Phi (°)
Residual Tangent:	NA	NA



Graph - Stress Deformation

ASTM D3080



Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Consol Test - Specimen 1 - Sequence 1 - 0.412 (tsf)

ASTM D3080

LIMS Code: [TO COME FROM LIMS] LIMS Specimen Code: [TO COME FROM LIMS]

Index	Elapsed Time (hh:mm:ss)	Load (Lbf)	Load (Lbf)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.0	0.5892	0.0000	0.0	1.11
1	00:00:06	0.0	0.5793	0.0000	0.0	1.11
2	00:00:15	0.0	0.5761	0.0032	0.3	1.10
3	00:00:30	0.0	0.5759	0.0034	0.3	1.10
4	00:01:00	0.0	0.5756	0.0037	0.4	1.10
5	00:02:00	0.0	0.5755	0.0038	0.4	1.10
6	00:04:00	0.0	0.5753	0.0040	0.4	1.10
7	00:08:00	0.0	0.5752	0.0041	0.4	1.10
8	00:15:00	0.0	0.5750	0.0043	0.4	1.10
9	00:30:00	0.0	0.5748	0.0045	0.4	1.10
10	01:00:00	0.0	0.5747	0.0046	0.5	1.10
11	01:28:19	0.0	0.5747	0.0046	0.5	1.10

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Technician: Htran

Test Date: 8/15/2025

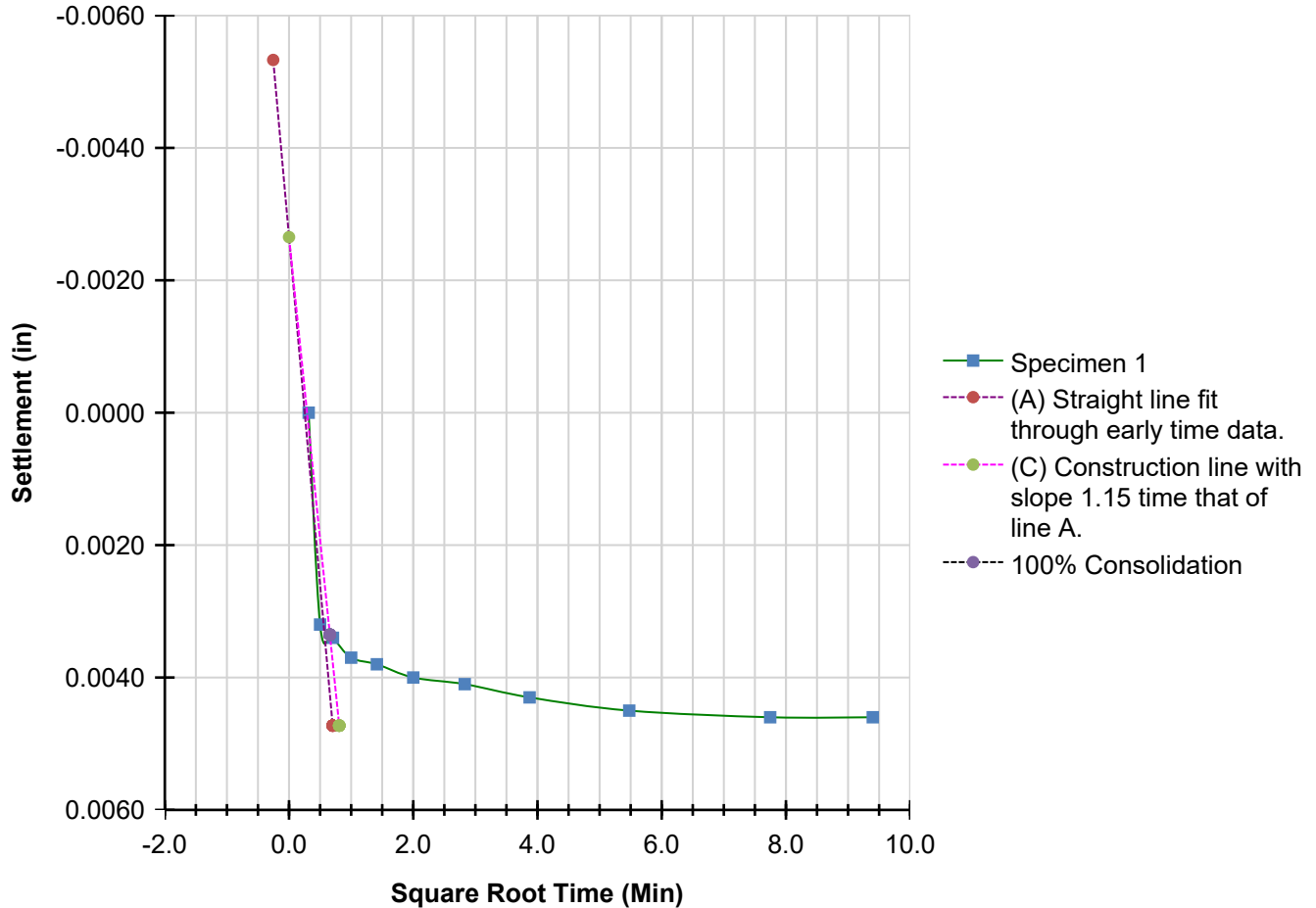
Report Created: 8/19/2025

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Square Root Time - Specimen 1 - Sequence 1 - 0.412 (tsf)

ASTM D3080



Tangent Construction Results

T90 (Min):	0.433
T50 (Min):	0.126
Cv (in ² /Min):	0.48565

Consol Test - Specimen 2 - Sequence 1 - 0.825 (tsf)

ASTM D3080

LIMS Code: [TO COME FROM LIMS] LIMS Specimen Code: [TO COME FROM LIMS]

Index	Elapsed Time (hh:mm:ss)	Load (Lbf)	Load (Lbf)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.0	0.5580	0.0000	0.0	1.09
1	00:00:06	0.0	0.5476	0.0000	0.0	1.08
2	00:00:15	0.0	0.5463	0.0013	0.1	1.08
3	00:00:30	0.0	0.5460	0.0016	0.2	1.08
4	00:01:00	0.0	0.5457	0.0019	0.2	1.08
5	00:02:00	0.0	0.5455	0.0021	0.2	1.08
6	00:04:00	0.0	0.5452	0.0024	0.2	1.08
7	00:08:00	0.0	0.5450	0.0026	0.3	1.08
8	00:15:00	0.0	0.5448	0.0028	0.3	1.08
9	00:30:00	0.0	0.5446	0.0030	0.3	1.08
10	01:00:00	0.0	0.5444	0.0032	0.3	1.08
11	01:27:38	0.0	0.5443	0.0033	0.3	1.08

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Technician: Htran

Test Date: 8/15/2025

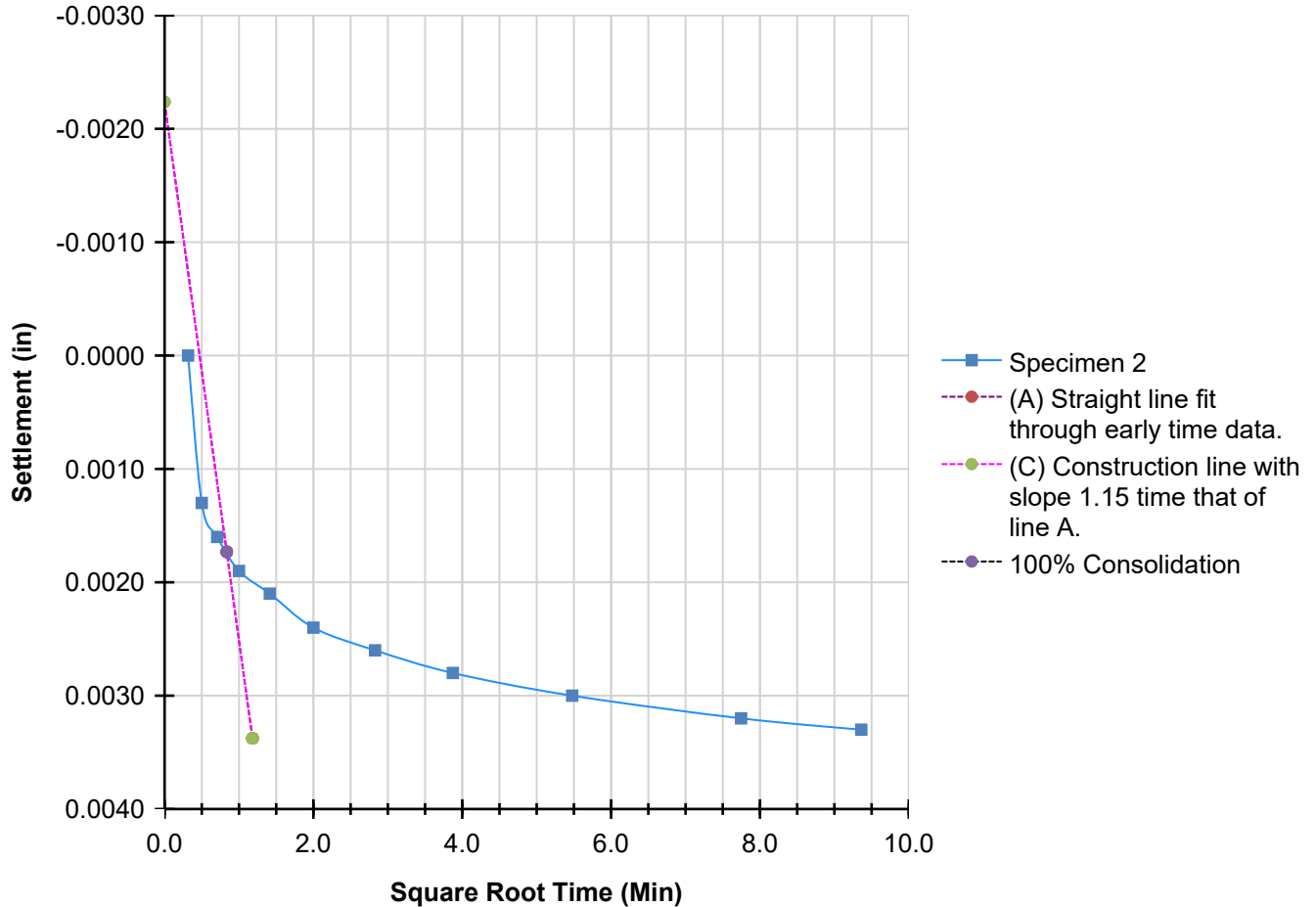
Report Created: 8/19/2025

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Square Root Time - Specimen 2 - Sequence 1 - 0.825 (tsf)

ASTM D3080



Tangent Construction Results

T90 (Min):	0.399
T50 (Min):	0.148
Cv (in ² /Min):	0.52844

Consol Test - Specimen 3 - Sequence 1 - 1.650 (tsf)

ASTM D3080

LIMS Code: [TO COME FROM LIMS] LIMS Specimen Code: [TO COME FROM LIMS]

Index	Elapsed Time (hh:mm:ss)	Load (Lbf)	Load (Lbf)	Settlement (in)	Axial Strain (%)	Void Ratio
0	00:00:00	0.0	0.6201	0.0000	0.0	1.11
1	00:00:06	0.0	0.6020	0.0181	1.8	1.07
2	00:00:15	0.0	0.5925	0.0276	2.8	1.05
3	00:00:30	0.0	0.5918	0.0283	2.8	1.05
4	00:01:00	0.0	0.5913	0.0288	2.9	1.04
5	00:02:00	0.0	0.5908	0.0293	2.9	1.04
6	00:04:00	0.0	0.5903	0.0298	3.0	1.04
7	00:08:00	0.0	0.5899	0.0302	3.0	1.04
8	00:15:00	0.0	0.5895	0.0306	3.1	1.04
9	00:30:00	0.0	0.5891	0.0310	3.1	1.04
10	01:00:00	0.0	0.5887	0.0314	3.1	1.04
11	01:26:14	0.0	0.5884	0.0317	3.2	1.04

Project Name: Appomattox Business Center - Preliminary Project Number: 12 20540

Technician: Htran

Test Date: 8/15/2025

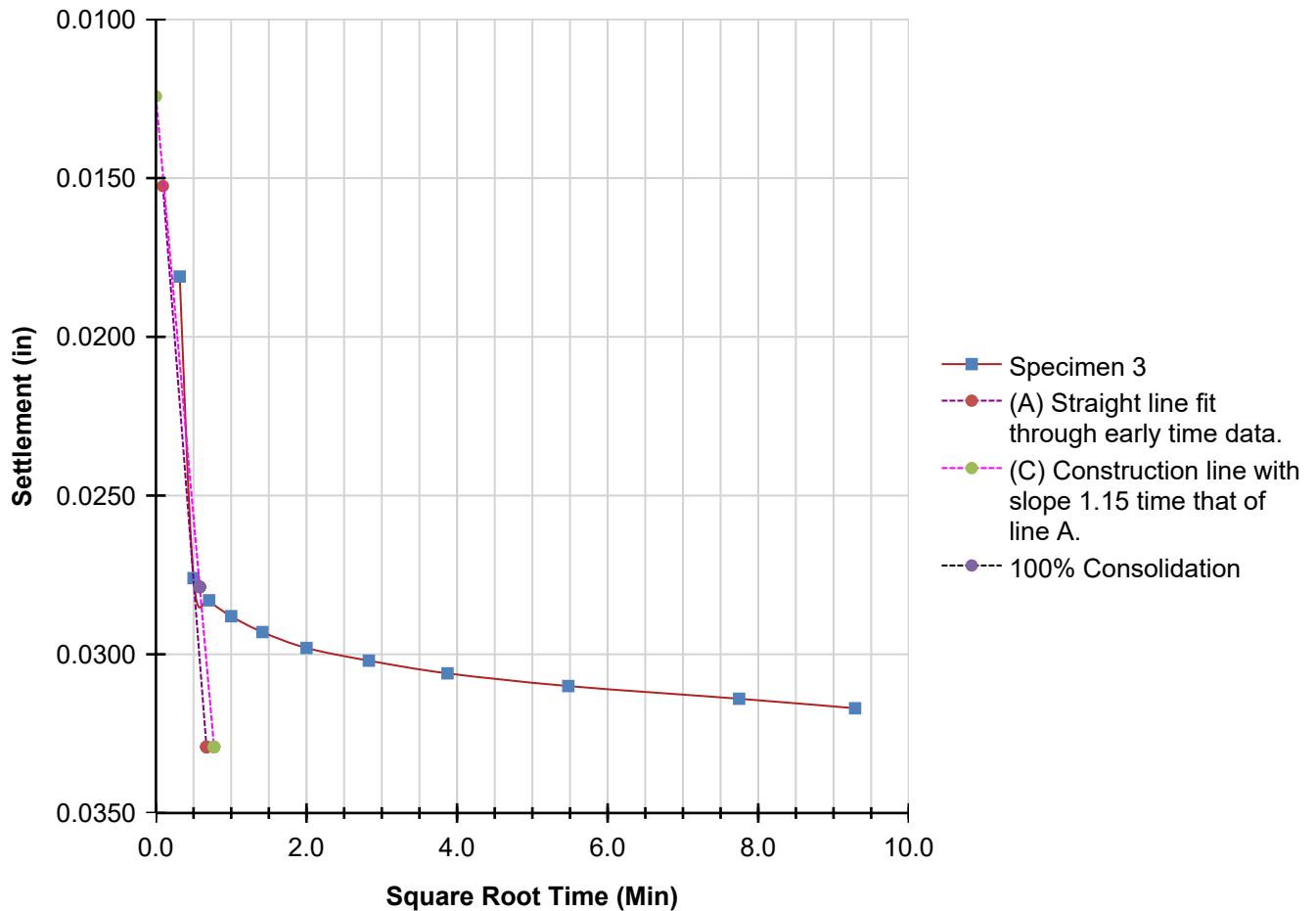
Report Created: 8/19/2025

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Square Root Time - Specimen 3 - Sequence 1 - 1.650 (tsf)

ASTM D3080

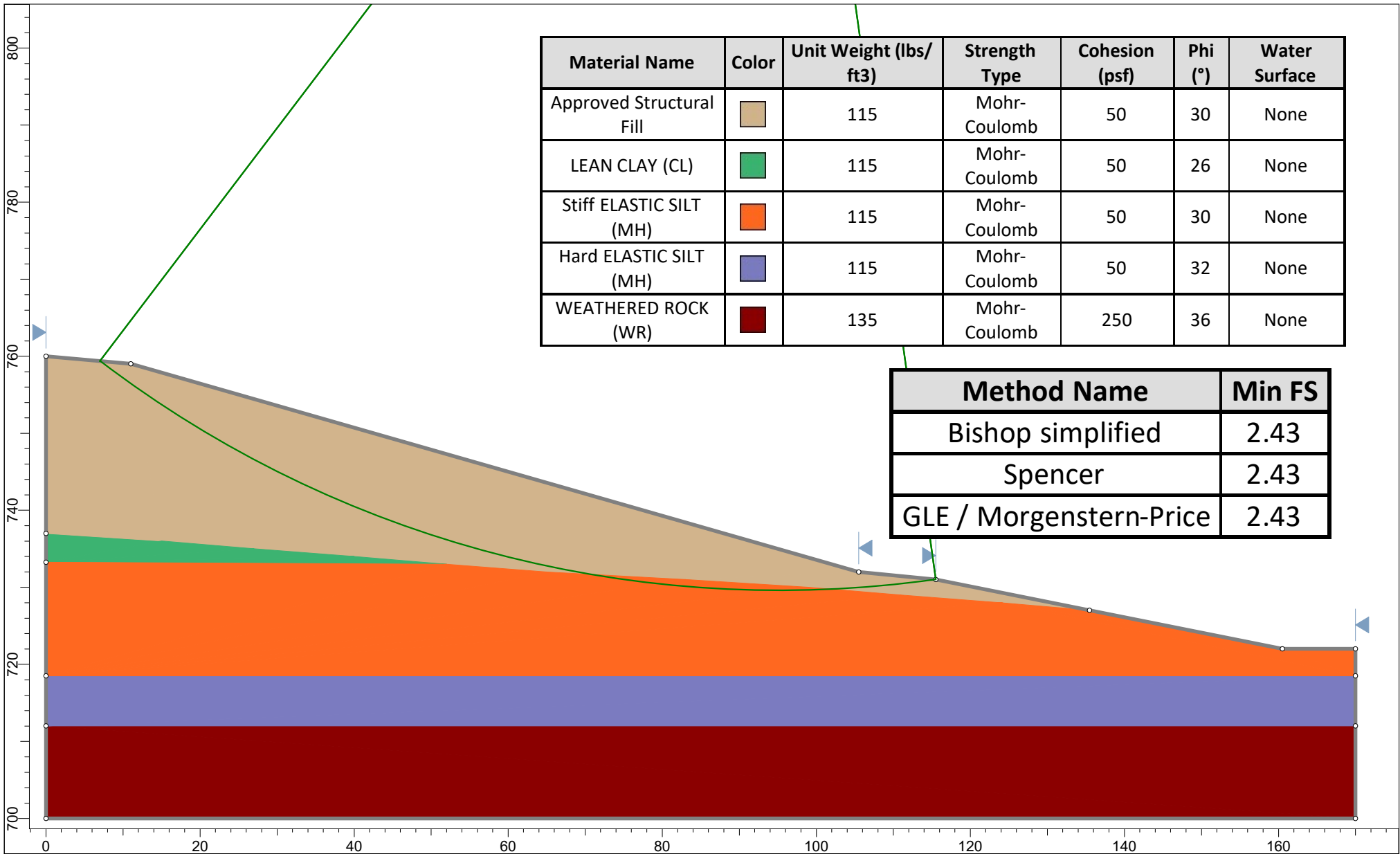


Tangent Construction Results

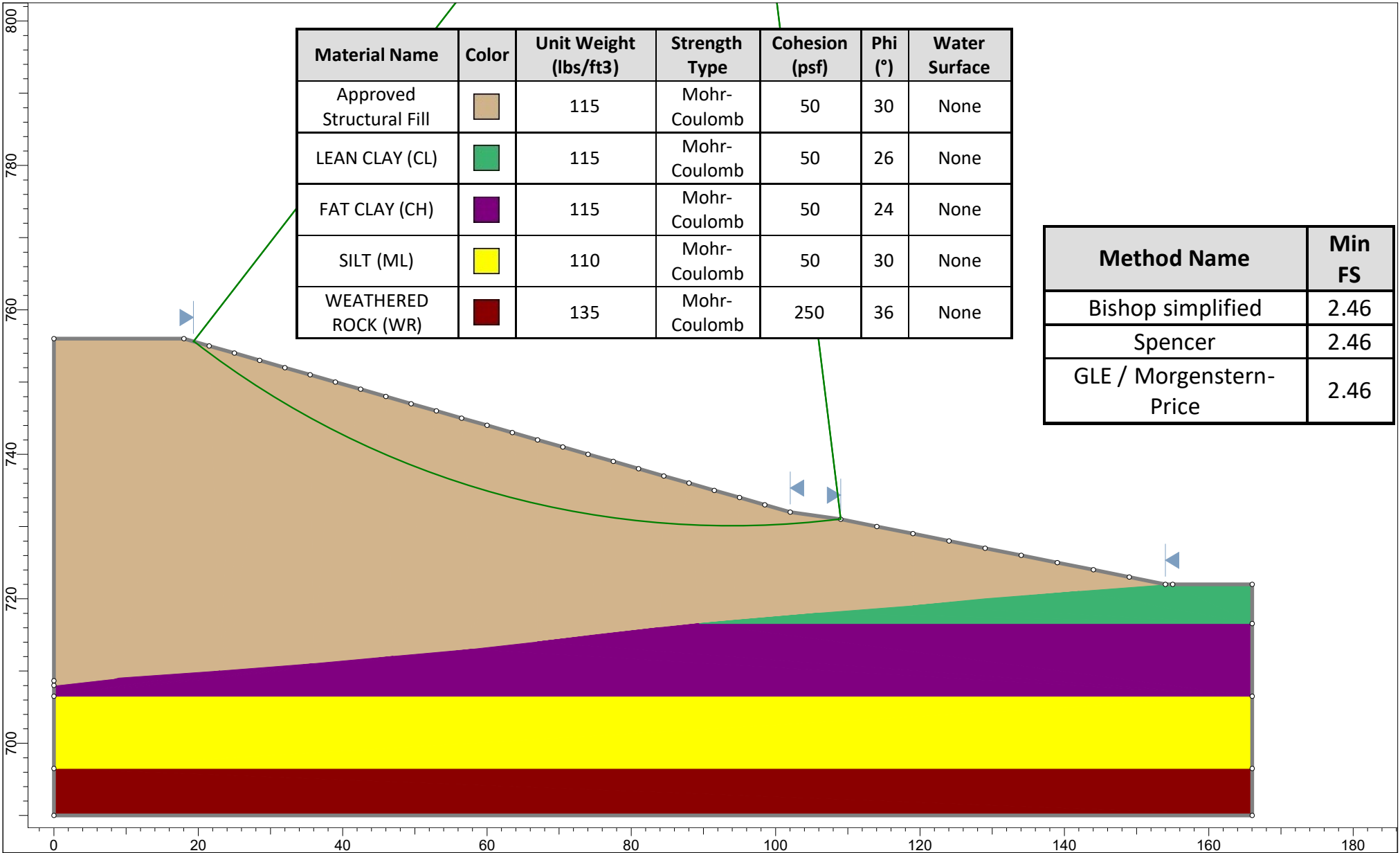
T90 (Min):	0.339
T50 (Min):	0.139
Cv (in ² /Min):	0.58561

APPENDIX D – Global Stability

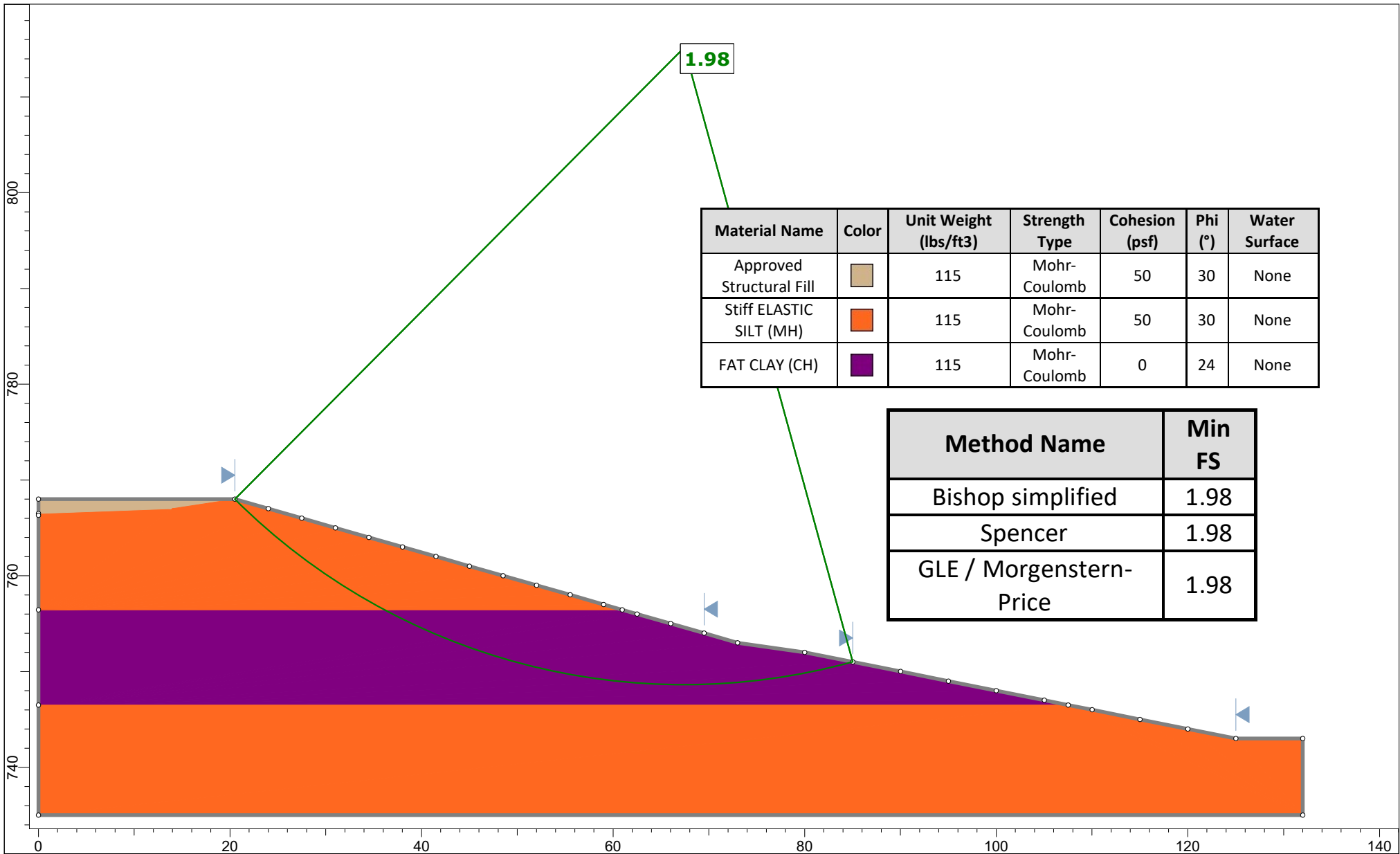
Slope Analyses



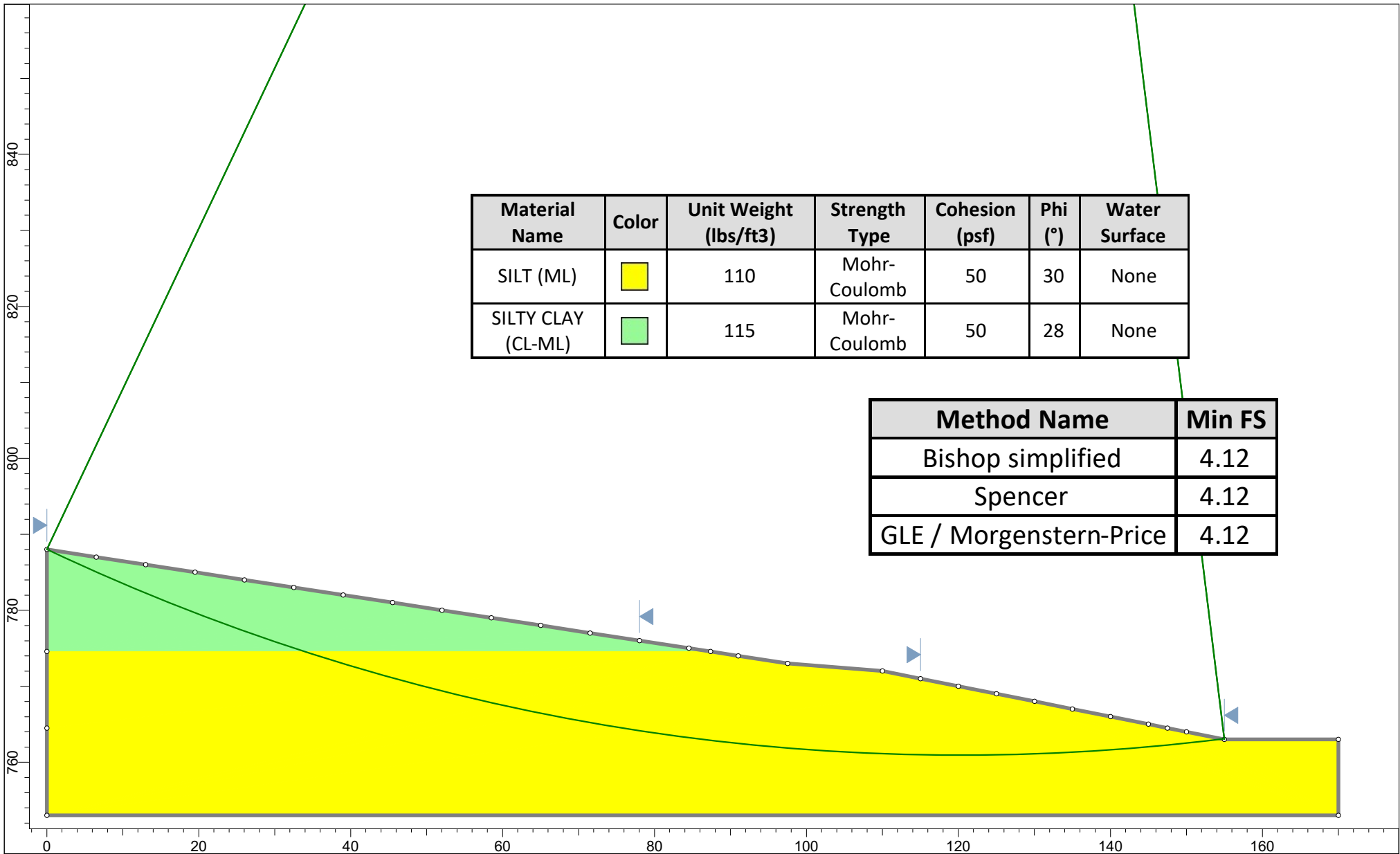
Project			
Appomattox Business Center - Preliminary			
Group	Group 1		Scenario
			Master Scenario
Drawn By	LNB		Company
			ECS Mid-Atlantic, LLC
Date	9/3/2025		File Name
			20540 Slide 1-1'.slmd



	Project		Appomattox Business Center - Preliminary	
	Group	Group 1	Scenario	Master Scenario
	Drawn By	LNB	Company	ECS Mid-Atlantic, LLC
	Date	9/3/2025	File Name	20540 Slide 2-2'.slmd
	SLIDEINTERPRET 9.032			



	Project		Appomattox Business Center - Preliminary	
	Group	Group 1	Scenario	Master Scenario
	Drawn By	LNB	Company	ECS Mid-Atlantic, LLC
	Date	9/3/2025	File Name	20540 Slide 3-3'.slmd
	SLIDEINTERPRET 9.032			



Project				Appomattox Business Center - Preliminary			
Group		Group 1		Scenario		Master Scenario	
Drawn By		LNB		Company		ECS Mid-Atlantic, LLC	
Date		9/3/2025		File Name		20540 Slide 4-4'.slmd	